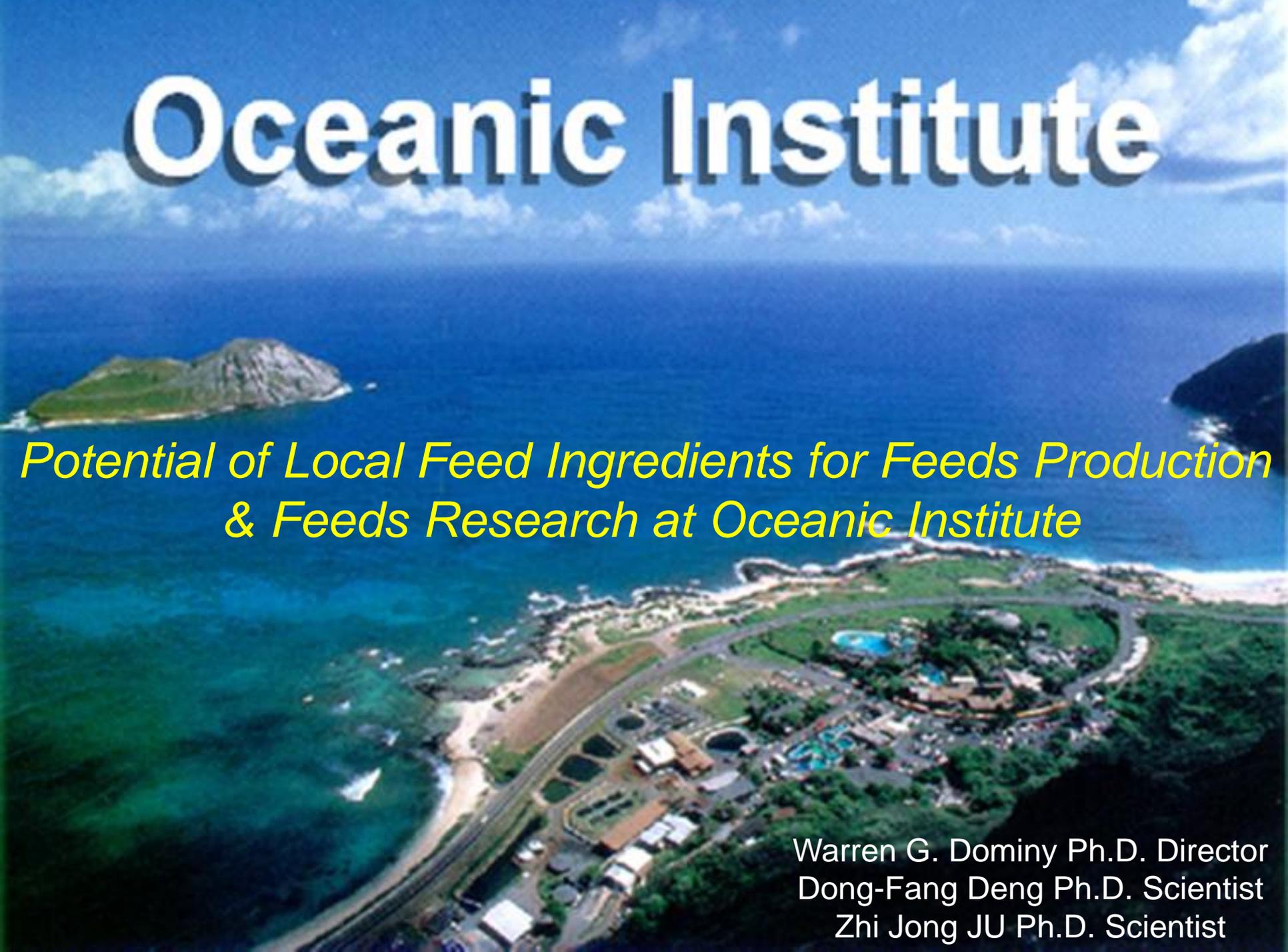


Oceanic Institute



*Potential of Local Feed Ingredients for Feeds Production
& Feeds Research at Oceanic Institute*

Warren G. Dominy Ph.D. Director
Dong-Fang Deng Ph.D. Scientist
Zhi Jong JU Ph.D. Scientist

Aquatic Feeds and Nutrition Department

Nutritional Biochemistry

Nutritional & Quality Control Analysis

Aquatic Nutrition

Nutritional Requirement Studies

Feed Science & Technology

Feed Processing Studies

Optimal Feed

**Nutritionally Balanced, Cost Effective, Environmentally Friendly,
Available year round**

Nutritional Biochemistry

Ingredient & Feed Characterization Quality Control

- **Ingredients**
- **Feeds**
- **Finished Products**

Nutritional Analysis

- **Proximate**
- **Amino Acids**
- **Fatty Acids**
- **Minerals**
- **Vitamins**
- **Pigments**
- **Phospholipids**



Nutritional & Quality Control Analysis

Aquatic Nutrition

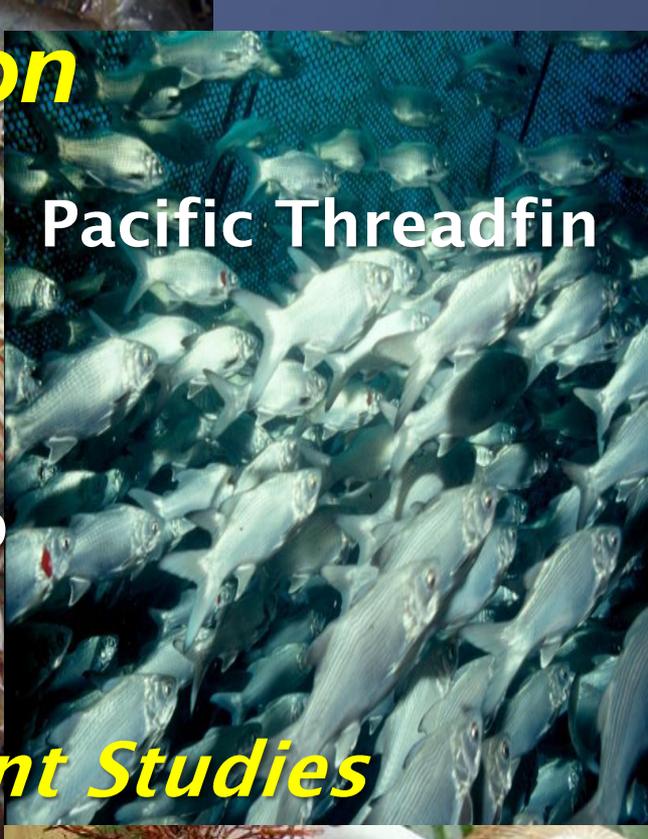
Kona Kampachi



Pacific White Shrimp



Pacific Threadfin



Nutritional Requirement Studies

Abalone



Sea Urchin



Opihi



Indoor Growth (fish)



Outdoor Growth (Shrimp & Fish)



**Aquatic
Nutrition
Testing Systems**

Digestibility (Shrimp)



Indoor Growth (Shrimp)



Attractant (Shrimp)



Feed Science & Technology

Feed Mill



Lab Scale



Pilot Scale Plant



Biofuels Co-Products

Terrestrial Crops



Aquatic Crops

Local Agriculture By-Products

Yeast Culture (papaya, tomato)



Biodiesel Algae (chlorella, diatoms)



Sugarcane / Fungus



Island Products

- Meat & bone meal
- Fish trim waste
- Mac nut press cake
- Jatropha press cake
- Kukui nut press cake
- Coconut press cake
- Fruit fly spent media
- Wheat mill run
- Okada – soy hulls
- Astaxanthin alga meal

Fish Processing Waste Recycling



Alaskan Fisheries By-Products

Salmon heads & racks
Pollock heads & racks
Pollock skin
Arrow tooth flounder
Skate meal
Viscera meal



Fish Hydrolysates
Long & short peptides
Salmon milt meal
Liver meal
Crab carapace meal
Fish bone meal



Networking / Collaboration

- **National Industries;** *Cargill, Poet, General Atomic, Monsanto, Solae ,Trident Seafood, Novus, Oberon, Bunge, Tyson, Pilgrims Pride, Rangen, Zeigler, Burris, Wenger, Bliss, Forberg, Integrated Aquaculture, Reed Mariculture, Land O'Lakes, Uniscope, etc.*
- **National Industry Trade Association;** *AFIA – American Feed Industry Association, AAFCO – Association American Feed Control Officials, American Soybean Association, United Soybean Board. US Wheat, Hawaii Cattleman Association, Hawaii Aquaculture & Aquaponic Association, Poultry Protein and Fat Council, Nation Renders Association, Fats and Proteins Research Foundation, etc.*
- **Local Industries;** *Pacific Biodiesel, Big Island Abalone, Kona Blue Farms, Hukilau Foods, Fresh Island Fish, Aloha Tofu, Island Commodities, Hawaii Flour Milling, Honolulu Clean Cities, etc.*
- **Universities;** *Texas A&M, Kansas State University, University of Hawaii – Manoa & Hilo, University of Alaska Fairbanks, FITC Kodiak Alaska, American Samoa Community College, Honolulu Community College, Kagoshima University, etc.*
- **Governmental Agencies;** *Pacific Basin Research Center USDA–ARS, UAF, ARS Project, CTSA – NIFA, SBIR–NIFA, Sea Grant., etc.*
- **And International:** *China, Japan, Korea, Indonesia, Germany, Norway, RMI, American Samoa, etc.*

Finished Products Marketed



Kona Kampachi



Pacific Threadfin (moi)



Abalone



Pacific White Shrimp