

# AQUACULTURE AMERICA



## 2014

**MONDAY, February 10**

### PLENARY

Monday, February 10 8:30 - 10:00 Room 605

Chair: Wendy Sealey

**8:30 Welcome and Awards**

**9:00 Student Spotlight**

**9:15 Patrick Sorgeloos**

AQUACULTURE: THE BLUE BIOTECHNOLOGY OF THE FUTURE

### DRUGS/THERAPEUTICS

Monday, February 10 11:00 - 12:30 Room 606

Chair: David Straus

**11:00 David L. Straus**, Bradley D. Farmer, Cynthia K. Ledbetter, Benjamin H. Beck,  
Rick S. Williams, Mike L. Clark, T. Mike Freeze

TREATING SUNSHINE BASS EGGS WITH COPPER SULFATE CONTROLS FUNGUS  
AND INCREASES SURVIVAL

**11:15 David D. Kuhn**, Stephen Smith, Dan Taylor, Mary Mainous

ORGANIC MOLLUSCIDIC OPTION FOR PONDS THAT PRODUCE ORNAMENTAL FISH

- 11:30 James Bowker**, Niccole Wandelaar, Molly Bowman, Dan Carty  
ESTABLISHING MARGINS OF SAFETY FOR FINGERLING RAINBOW TROUT,  
YELLOW PERCH, AND CHANNEL CATFISH SEDATED WITH AQUI-S20E
- 11:45 Anita Kelly**, Bradley Farmer, Benjamin Beck, David Straus  
MINNOWS GET COLUMNARIS TOO; COPPER SULFATE WORKS!
- 12:00 Albert Ekanem**, Austin Obiekezie, Dorathy Umoh  
NON CHEMICAL-BASED NATURAL PRODUCTS IN THE TREATMENT AND  
CONTROL OF DISEASE IN FISH

## HOW DO WE GROW AQUACULTURE?

Monday, February 10 11:00 - 12:30 Room 616  
Chairs: Brian Nerrie, Dave Lankamer NAESC

- 11:00 Dave Landkamer**  
HOW DO WE GROW THE AQUACULTURE INDUSTRY IN THE U.S.?  
ON A NATIONAL LEVEL? ON AN INDUSTRY LEVEL? ON A REGIONAL LEVEL?  
ON A STATE LEVEL?

## OYSTERS

Monday, February 10 11:00 - 12:30 Room 618  
Chair: Cecily Steppe

- 11:00 David Fredriksson**, Cecily Steppe, Louise Wallendorf, Robert Mayer  
A CONTAINMENT BARRIER DESIGN PROCEDURE FOR THE PRACTICE OF *IN SITU*  
SETTING OF *Crassostrea virginica* LARVAE FOR BOTH AQUACULTURE AND  
RESTORATION APPLICATIONS
- 11:15 Cecily N. Steppe**, David Fredriksson, William Yates, Louise Wallendorf,  
Robert Mayer  
DIRECTED *IN SITU* SETTING OF *Crassostrea virginica* LARVAE ON A TARGETED  
SITE IN A TIDAL CREEK; OVERWINTER SURVIVAL AND SET IN THE SECOND YEAR
- 11:30 Ana Gavrilovic**, Jurica Jug-Dujakovic, Zvonimir Kozaric, Ana Ljubicic,  
Alexis Conides, Steven Van Gorder  
VARIATION OF NON-SPECIFIC AMINOPEPTIDASE ACTIVITY IN THE DIGESTIVE  
SYSTEM OF EUROPEAN FLAT OYSTER *Ostrea edulis* IN RELATION TO FOOD  
AVAILABILITY AND CONDITION INDEX
- 11:45 Eman Hashem Radwan**  
SURVEILLANCE STUDY OF MARINE EDIBLE BIVALVE SPECIES AVAILABLE IN  
EGYPT

**STOCK ENHANCEMENT**

Monday, February 10 11:00 - 12:30 Room 615

Chair: Eric Saillant

- 11:00 Eric Saillant**, Carly Somerset  
ISOLATION BY DISTANCE AND MANAGEMENT OF STOCK ENHANCEMENT PROGRAMS FOR MARINE SPECIES – CASE STUDY OF THE SPOTTED SEATROUT *Cynoscion nebulosus*
- 11:15 Karl Brenkert**, Tanya Darden, Tim O'Donnell, Michael R. Denson  
IMPLEMENTATION AND EFFECTIVENESS OF STOCK ENHANCEMENT OF SPOTTED SEATROUT *Cynoscion nebulosus* IN SOUTH CAROLINA
- 11:30 Paula Caldentey**, Jayne Gardiner, Nathan Brennan  
PREY CAPTURE KINEMATICS OF WILD AND HATCHERY JUVENILE COMMON SNOOK *Centropomus undecimalis*
- 11:45 Olalekan Oguntade**, Tope Oketoki, Esther Ukenye, Tonna Mojekwu, Adeola Usman, Temitope Adeleke  
SURVEY OF THE PRESENT AND FAST DISAPPEARING CULTURABLE FISH SPECIES ALONG SOME RIVERS IN THE NIGER DELTA, NIGERIA
- 12:00 Khalid Abbas**, Yusara Waris, Fouzia Sultana, Zhou Xiaoyun  
MOLECULAR MARKERS REVEAL LOW GENETIC VARIABILITY IN WILD STOCKS OF *Catla catla* IN PUNJAB PAKISTAN
- 12:15 Jiashou Liu**, Zhongjie Li, Tanglin Zhang, Xiaowu Li, Wentao Zeng  
STOCK ENHANCEMENT OF THE MITTEN CRAB *Eriocheir sinensis* IN LAKES OF CHINA BASED ON RESOURCE UTILIZATION AND PROTECTION

**SOY IN AQUAFEEDS**

Monday, February 10 11:00 - 3:00 Room 609

Chair: Alex Buentello

- 11:00 Ken Overturf**, Frederik Venold, Michael Penn, Ashild Krogdahl  
IMPROVED TOLERANCE OF SOYBEAN MEAL IN RAINBOW TROUT SELECTED FOR GROWTH ON PLANT-BASED DIETS
- 11:15 Karolina Kwasek**, Michal Wojno, Alejandro Buentello, Konrad Dabrowski  
CAN REPLACEMENT OF 75% FISHMEAL PROTEIN WITH SOYBEAN MEAL SUPPORT OPTIMAL GROWTH IN YELLOW PERCH?
- 11:30 Vikas Kumar**, Han-Ping Wang, Ram Lalgudi, Rob Cain, Barry McGraw, Zhigang Shen, Nour Eissa, Hong Yao, Kurt A. Rosentrater  
UTILIZATION OF CHEMICALLY MODIFIED SOYBEAN MEAL AND ITS EFFECTS ON GROWTH AND HEALTH OF YELLOW PERCH *Perca flavescens*
- 11:45 Brian S. Shepherd**, Osvaldo J. Sepulveda-Villet, Frederic T. Barrows, Wendy M. Sealey, T. Gibson Gaylord, Debra E. Palmquist, Heidi Hill, Fred P. Binkowski  
INFLUENCE OF MINERAL SUPPLEMENTATION ON GROWTH IN YELLOW PERCH *Perca flavescens* FED A SOY-BASED DIET

- 12:00 Waldemar Rossi Jr.**, Delbert M. Gatlin III  
EFFECT OF PROCESSING TECHNOLOGY ON THE DIGESTIBILITY AND NUTRIENT AVAILABILITY OF SOYBEAN-MEAL IN RED DRUM *Sciaenops ocellatus*
- 12:15 Dave Jirsa**, Artur Rombenso, Michael Page, Mark Drawbridge, Jesse Trushenski  
FERMENTED SOYBEAN MEAL AS AN ALTERNATIVE TO FISH MEAL IN DIETS FOR WHITE SEABASS *Atractoscion nobilis* AND CALIFORNIA YELLOWTAIL *Seriola lalandi*
- 12:30 LUNCH**
- 1:30 Carlos E. Tudela**, Jorge A. Suarez, Alejandro Buentello, Daniel D. Benetti  
EFFECT OF REPLACING DIETARY FISH MEAL WITH SOY-BASED PRODUCTS ON PRODUCTION PERFORMANCE OF NEAR COMMERCIAL SIZE COBIA *Rachycentron canadum*
- 1:45 Karma Kissinger**, Armando García-Ortega, Jesse Trushenski  
FISH MEAL AND FISH OIL REPLACEMENT BY SOYBEAN PROTEIN AND MARINE MICROALGAE IN DIETS FOR JUVENILE GIANT GROUPEL *Epinephelus lanceolatus*
- 2:00 Adel Khamis Soliman**, Habashy Mohamed Hasan, Assma Mohamed  
PARTIAL AND COMPLETE REPLACEMENT OF FISH MEAL PROTEIN BY SOYBEAN MEAL PROTEIN AND SOYBEAN PROTEIN CONCENTRATE IN DIETS OF NILE TILAPIA

## LARVAL REARING

Monday, February 10 11:00 - 4:30 Room 602

Chairs: Mark Drawbridge, Kevin Stuart, Federico Rotman

- 11:00 Keri Maull**, Kevin Stuart, Federico Rotman, Mark Drawbridge  
A NOVEL APPROACH FOR ROTIFER PRODUCTION AT HUBBS-SEAWORLD RESEARCH INSTITUTE
- 11:15 Amin Eimanifar**, Gilbert Van Stappen, Brad Marden, Michael Wink  
*Artemia* BIODIVERSITY IN ASIA – PHYLOGEOGRAPHY OF THE INTRODUCED AMERICAN SPECIES *Artemia franciscana* (KELLOGG, 1906)
- 11:30 Eric Cassiano**, Matthew Wittenrich, Kevin Barden, Jon-Michael Degidio, Craig Watson  
THE EFFECT OF SALINITY ON THE GROWTH OF THE ROTIFER *Colurella adriatica*: A POTENTIAL NEW LIVE FEED FOR MARINE FISH LARVICULTURE
- 11:45 Agnes Bardon-Albaret**, Sara Kerner, Nathan Herring, Eric Saillant  
EFFECTS OF ENVIRONMENTAL STRESSORS APPLIED POST-FERTILIZATION ON THE VIABILITY OF RED SNAPPER *Lutjanus campechanus* EGGS AND LARVAE
- 12:00 Ahmed Md. Salem**, Hassan Ibrahim, Heba El-Sayed, Abd El-Aziz Nour, Tarek Srour, Samira Assem  
MARINE PROBIOTIC, SYNBIOTIC AND GREENWATER ENRICHED *Artemia* AND ROTIFERS IMPROVING THE GROWTH AND BACTERIOLOGY OF EUROPEAN SEA BASS LARVA EARLY WEANING IN ALEXANDRIA, EGYPT
- 12:30 LUNCH**

- 1:30 Jennifer Cobcroft**, Stephen Battaglone  
 SWIMBLADDER HYPERINFLATION IN STRIPED TRUMPETER *Latris lineata* LARVAE IS IMPACTED BY TANK WALL COLOUR
- 1:45 Lisa C. Armbruster**, Kenneth A. Webb, Ronald B. Johnson  
 USING INDUCTIVELY COUPLED PLASMA OPTICAL EMISSION SPECTROSCOPY TO MEASURE THE NUMBER OF ROTIFERS CONSUMED BY FISH LARVAE
- 2:00 Christopher Manley**, Chet Rakocinski, Phillip Lee, Reginald Blaylock  
 THE RELATIONSHIP BETWEEN FEEDING FREQUENCY AND AGGRESSIVE BEHAVIORS IN LARVAL HATCHERY-REARED SPOTTED SEATROUT *Cynoscion nebulosus*
- 2:15 Christopher Manley**, Chet Rakocinski, Phillip Lee, Reginald Blaylock  
 MANIPULATING FEEDING FREQUENCY AND STOCKING DENSITY TO REDUCE AGGRESSION AND CANNIBALISM IN LARGE-SCALE PRODUCTION OF HATCHERY-REARED SPOTTED SEATROUT *Cynoscion nebulosus*
- 2:30 Eric Cassiano**, Matthew Wittenrich, Kevin Barden, Jon-Michael Degidio, Craig Watson  
 THE EFFECT OF LIGHT INTENSITY ON FEEDING RATE AND PREY SELECTION IN YELLOW TANG LARVAE *Zebrasoma flavescens*: COMPARING THE ROTIFER *Colurella adriatica* TO THE CALANOID COPEPOD *Parvocalanus crassirostris*
- 2:45 John Grayson**, Karolina Kwasek, Michal Wojno, Nevine Shabana, Konrad Dabrowski  
 IMPROVING YELLOW PERCH LARVAE CULTURE BY UTILIZING LIVE FOOD ENRICHMENT WITH PUFA
- 3:00 Zack Daugherty**, Robert Michael, Gavin Partridge, Lindsey Woolley, John Stieglitz, Daniel Benetti  
 EFFECTS OF ALGAE PASTE SUBSTITUTES ON THE LARVAL REARING PERFORMANCE AND MICROBIAL COMMUNITIES IN THE CULTURE OF YELLOWTAIL KINGFISH *Seriola lalandi* AND COBIA *Rachycentron canadum*
- 3:15 Kenneth Webb**, Lisa Armbruster, Michael Rust  
 THE MONTLAKE OPEN FORMULATION REFERENCE DIET AS A WEANING DIET IN LARVAL RED DRUM *Sciaenops ocellatus*
- 3:30 Kevin Stuart**, Frederic Barrows, Michael Rust, Ronald Johnson, Mark Drawbridge  
 TESTING OPEN FORMULA MICRODIETS ON TWO MARINE FINFISH SPECIES
- 3:45 Maria Celia Portella**, Thiago M. de Freitas, Hellen Buzollo, Tais da S. Lopes  
 INFLUENCE OF WEANING ON THE INCIDENCE OF SKELETAL ANOMALIES IN PACU *Piaractus mesopotamicus*
- 4:00 José Reyes-Tomassini**, Barry Berejikian, Jonathan Lee, Matthew Cook, Tom Wade, Rick Goetz  
 THE EFFECT OF LIVE PREY EXTRACTS ON THE FEEDING RESPONSE AND BEHAVIOR OF SABLEFISH *Anoplopoma fimbria*

**ZEBRAFISH HUSBANDRY WORKSHOP**

Monday, February 10 11:00 - 4:30 Room 607

Chair: Bobbi Bauer

**11:00 ZHA ANNUAL MEETING****12:00 LUNCH****1:30 Mark Francis**  
INTRODUCTION AND 10-YEAR REVIEW**Carrie Barton**  
ZHA UPDATE**April Freeman**  
ZIRC UPDATE**ZHA PRESENTATION****1:55 Brad Goodwin**  
WELCOME AND OVERVIEW**2:00 George Sanders**  
ZEBRAFISH HUSBANDRY  
Housing, Nutrition, Care, Water Quality, Record Keeping, Breeding**2:45 BREAK****3:00 Christine Lieggi**  
VETERINARY CARE OF ZEBRAFISH  
Prevention & treatment of disease, Biosecurity, Import/export procedures,  
Quarantine**Brad Goodwin**  
SEDATION, ANESTHESIA AND EUTHANASIA**3:35 Joseph Mat Schech**  
ZEBRAFISH MODELS AT THE NIH**WORKSHOP****4:15 Chereen Collymore**  
EVALUATION OF ZEBRAFISH *Danio rerio* NET CLEANING AND DISINFECTION  
PROTOCOLS**4:30 Break and walk to:****5:00 CHILDREN'S SEATTLE TOUR**

## STUDENT CAREER PLANNING SEMINAR

Monday, February 10 1:30 - 4:30 Room 604

Chair: Daniel Aboaygoe

MONDAY

- 1:30 Douglas G. Drennan**  
CAREER PATHS IN AQUACULTURE – A MANUFACTURERS PERSPECTIVE I.E. RESEARCH AND PRODUCT DEVELOPMENT
- 1:45 Amy Riedel-Stone**  
EVOLUTION OF A FISH FARMER TO A SALES MANAGER, CAREER CHOICES EXPLORED
- 2:00 Jackie Zimmerman**  
OH THE PLACES YOU GO...IN AQUACULTURE
- 2:15 Caleb Price, Kat Goetting, Hillary Egna**  
“YOU ALREADY HAVE WHAT IT TAKES TO GET A GOOD JOB...”
- 2:30 Jeffrey Silverstein**  
SWIMMING WITH THE FISHES: FEDERAL CAREER PATHS FOR AQUACULTURE STUDENTS
- 2:45 Myron Kebus**  
CAREERS IN VETERINARY MEDICINE IN AQUACULTURE
- 3:00 Laura Hoberecht**  
NOAA'S ROLE IN AQUACULTURE; OVERVIEW AND OPPORTUNITIES
- 3:15 Patrick Sorgeloos**  
JOINT CAPACITY BUILDING AT MSC AND PHD LEVEL BETWEEN UNIVERSITIES IN NORTH AND SOUTH, EAST AND WEST

## SEAFOOD PROCESSING AND TRANSPORT

Monday, February 10 1:30 - 3:00 Room 613

Chair: Pete Nickalson

- 1:30 John Colt, Gary Fornshell**  
WATER QUALITY IN TILAPIA TRANSPORT: FROM THE FARM TO THE RETAIL STORE
- 1:45 David D. Kuhn, Moonyoung Choi, Shawn Coyle, Terrill Hanson, Laura Lawson, James Tidwell**  
DEVELOPING AND VALIDATING PROTOCOLS FOR WATERLESS SHIPPING OF LIVE SHRIMP
- 2:00 Jesse Trushenski, John Bowzer**  
DEVELOPING RESTED HARVEST PROTOCOLS FOR RAINBOW TROUT
- 2:15 Pete Nicklason, Ronald Johnson**  
A HEATED BALL MILL PROCESS TO MAKE SUSTAINABLE TRIM BASED FEED
- 2:30 Theodora Hyuha, Hillary Egna, Joseph Molnar, James Bukenya, Willy Cornelius Kwiri**  
GENDER PERSPECTIVES IN PROCESSING AND HANDLING OF AQUACULTURE PRODUCTS IN UGANDA

# AQUAPONIC FOOD PRODUCTION

Monday, February 10 11:00 - 3:30 Room 608

Chair: R. Charlie Shultz

- 11:00 James Rakocy**, Wilson Lennard  
CURRENT ISSUES IN AQUAPONICS
- 11:15 Richard C. Shultz**, Nick A. Savidov  
EVOLUTION OF AQUAPONICS IN ALBERTA, CANADA
- 11:30 George Brooks, Jr.**  
WHAT GOOD IS AQUAPONICS?
- 11:45 Patricia L. Duncan**  
LESSONS LEARNED FROM TECHNOLOGY TRANSFER OF AQUAPONICS  
TECHNIQUES AND BUSINESS DEVELOPMENT THROUGH SMALL-SCALE  
DEMONSTRATIONS
- 12:00 Edoardo Pantanella**, Giuseppe Colla, Ram C. Bhujel  
WATER USE AND NUTRIENT SINK IN AQUAPONICS
- 12:15 Edoardo Pantanella**, Ram C. Bhujel, Giuseppe Colla, Win Myint  
AQUAPONICS FOR LIVELIHOODS?
- 12:30 LUNCH**
- 1:30 Eric Highfield**  
ALTERNATIVE ENERGIES FOR AQUAPONICS IN CONTROLLED ENVIRONMENT  
AGRICULTURE
- 1:45 John Derksen**, Montserrat Villanueva-vorvolla  
COMPARISON OF NFT AND RAFT TECHNIQUE USING L.E.D. LIGHTING AND BASIL  
IN AN AQUAPONICS SYSTEM
- 2:00 Donald Bailey**, Dilip Nandwani  
SELECTION OF AN AQUACULTURE PRODUCTION SYSTEM FOR FARMERS IN THE  
U.S. VIRGIN ISLANDS
- 2:15 Luke Oliver**, Shawn Coyle, Leigh Anne Bright, Zachary Kupchinsky, Doug Blair,  
Chelsea Watts, James Tidwell  
COMPARISON OF DIFFERENT LIGHT TECHNOLOGIES FOR INDOOR AQUAPONIC  
PRODUCTION OF WHITE-STEMMED PAK CHOI *Brassica rapa*
- 2:30 Kurt Rosentrater**, D. Allen Pattillo  
COMPARISON OF LIGHT SOURCES IN AQUAPONICS SYSTEMS ON PRODUCTION  
EFFICIENCIES AND RESULTING ECONOMICS
- 2:45 Matthew S. Recsetar**, Anita M. Kelly, Brandon M. Baumhoer  
YIELD COMPARISON OF TOMATO AND PEPPER PLANTS GROWN IN TWO  
DIFFERENT GREENHOUSE AQUAPONIC SYSTEMS
- 3:00 Karen M. Buzby**, Nicole L. Waterland, Kenneth J. Semmens, LianShin Lin  
EVALUATING AQUAPONIC CROPS IN A FLOW-THROUGH FISH CULTURE SYSTEM
- 3:15 Sarah K. Taber**  
FOOD SAFETY IN AQUAPONICS



# BIOFLOC WORKSHOP: THE TEXAS A&M AGRILIFE SUPER-INTENSIVE INDOOR SHRIMP BIOFLOC PROGRAM: SYSTEM DESIGN, OPERATION, AND COMMERCIALIZATION

Monday, February 10 1:30 - 4:30 Room 611

Chair: Peter Woods

MONDAY

- 1:30 Granvil Treece**  
Introduction
- 1:35 Tzachi Samocha**  
The Texas A&M AgriLife Biofloc System
- 1:55 Tzachi Samocha**  
Nursery Operations
- 2:10 Tim Morris**  
Commercial Biofloc Nursery Operations
- 2:30 Tzachi Samocha, Leandro Castro**  
DESIGN AND OPERATION NURSERY AND GROW-OUT BIOFLOC SYSTEMS AT THE TEXAS A&M AGRILIFE RESEARCH MARICULTURE LAB AT FLOUR BLUFF IN CORPUS CHRISTI, TEXAS
- 2:50 John Leffler, Jeff Brunson**  
POTENTIAL ENVIRONMENTAL CHALLENGES OF HYPER-INTENSIVE BIOFLOC GROWOUT SYSTEMS
- 3:10 BREAK**
- 3:30 Terrill Hanson**  
ECONOMIC OVERVIEW OF BIOFLOC-DOMINATED, SUPER-INTENSIVE *Litopenaeus vannamei* GROW-OUT RACEWAY SYSTEMS
- 4:00 Tzachi Samocha**  
Summary & Questions

## GENERAL NUTRITION

Monday, February 10 1:30 - 4:30 Room 618

Chairs: Ron Johnson, Lisa Armbruster

- 1:30 Steven Hughes, Jasmine Smalls**  
ASSESSMENT OF FEEDING EQUATIONS FOR NILE TILAPIA *Oreochromis nilotica* USING FISH WEIGHT, TEMPERATURE, AND DIGESTIBLE ENERGY
- 1:45 Seunghyung Lee, Yichuan Wang, Silas Hung, Anders Strathe, Nann Fangué, James Fadel**  
DEVELOPMENT OF OPTIMUM FEEDING RATE MODEL FOR WHITE STURGEON *Acipenser transmontanus*
- 2:00 Tim Markey, Scott Snyder, Jesse Trushenski**  
EFFECTS OF NUTRIENT DENSITY AND FEEDING REGIMEN ON HYBRID STRIPED BASS *Morone chrysops* × *M. saxatilis* PRODUCTIVITY

- 2:15 Seunghyung Lee**, Liran Haller, Nann A. Fangué, James G. Fadel, Silas S. O. Hung  
EFFECTS OF FEEDING RATES ON GROWTH PERFORMANCE AND ENERGY DEPOSITION OF SUBYEARLING WHITE STURGEON *Acipenser transmontanus*
- 2:30 Matthew C.J. Taynor**, Jorge Suarez, Daniel D Benetti  
DIETARY PROTEIN/ENERGY RATIOS FOR ADULT FLORIDA POMPANO *Trachinotus carolinus*: GROWTH, FEED AND NITROGEN UTILIZATION
- 2:45 Muhammad Hafeez-ur-Rehman**, Muhammad Ashraf, Farzana Abbas, Khalid Javed Iqbal, Sydah Andleeb  
EFFECT OF FEED WITH VARYING DIETARY PROTEIN LEVELS ON GROWTH, SURVIVAL AND RATE OF CANNIBALISM IN FRY REARING OF GIANT MURREL *Channa marulius*
- 3:00 Yongfang Zhang**, Gregory A. Dudenhoeffer, Thomas R. Omara-Alwala  
THE EFFECT OF DIETARY PROTEIN LEVEL ON THE GROWTH AND DIGESTIVE PROTEASE ACTIVITY IN JUVENILE BLUEGILL *Lepomis macrochirus*
- 3:15 Wu Xiaoyi**, Delbert M. Gatlin III, Duncan S. MacKenzie  
ALTERING DIETARY PROTEIN CONTENT IN MORNING AND EVENING FEEDINGS AFFECTS GROWTH AND AMMONIA EXCRETION OF RED DRUM *Sciaenops ocellatus*
- 3:30 Mihai Sun**, Robert Hayward, Jeff Firman  
MODELING ESSENTIAL AMINO ACID REQUIREMENTS OF YELLOW PERCH *Perca flavescens*
- 3:45 Kiuomars Rohani-Ghadikolaei**, Eesa Abdolalian, Ng Wing-Keong  
GROWTH AND SURVIVAL RATE OF *Penaeus indicus* LARVAE FED ON MICROALGAE *Isochrysis galbana* AND *Chaetoceros muelleri* CULTURED WITH DIFFERENT SEAWEED EXTRACTS
- 4:00 Sergio Nates**, Kent Swisher  
SUSTAINABILITY IN THE AQUACULTURE FEED INDUSTRY: IS THIS POSSIBLE?

## GENETICS

Monday, February 10 1:30 - 4:30 Room 606

Chair: Debbie Plouffe

- 1:30 Miyako Kodama**, Marine Brieuc, Robert Devlin, Kerry Naish  
APPROACHES TO GENOME MAPPING OF BIALLELIC MARKERS IN A RESIDUAL TETRAPLOID SPECIES, COHO SALMON, AND LOCATION OF QUANTITATIVE TRAIT LOCI ASSOCIATED WITH WEIGHT, LENGTH, GROWTH RATE AND AGE AT SEXUAL MATURITY
- 1:45 Debbie Plouffe**, Marcia Chiasson, America Fujimoto, Jason Stannard, John Buchanan  
A LOW DENSITY SINGLE NUCLEOTIDE POLYMORPHISM (SNP) PANEL FOR PARENTAGE ASSIGNMENT AND DETERMINATION OF GENETIC SEX IN A PEDIGREED POPULATION OF ATLANTIC SALMON *Salmo salar*

- 2:00 Daniel Drinan**, Carl Ostberg, Kerry Naish  
CONSTRUCTION OF A HYBRID GENETIC MAP WITH BI-ALLELIC MARKERS USING HYBRIDIZED RAINBOW *Oncorhynchus mykiss* AND YELLOWSTONE CUTTHROAT TROUT *O. clarkii bouvieri*
- 2:15 Thomas A. Delomas**, Boris Gomelsky, Kyle J. Schneider, Ammu Anil  
SIZE AND PLOIDY VARIABILITY IN SECOND GENERATION KOI × GOLDFISH HYBRIDS
- 2:30 Boris Gomelsky**, Kyle Schneider, Ammu Anil  
TRIPLOID KOI FEMALES DEVELOP LARGE OVARIES AND PRODUCE MASS ANEUPLOID PROGENY WHEN CROSSED WITH DIPLOID MALES
- 2:45 Dustin Moss**, Shaun Moss, Steve Arce, Cleto Otoshi  
BREEDING FOR TAURA SYNDROME VIRUS RESISTANCE IN PACIFIC WHITE SHRIMP *Penaeus (Litopenaeus) vannamei*: A REVIEW OF PAST AND PRESENT RESEARCH
- 3:00 William Wolters**, Gary Burr  
SELECTION RESPONSES FOR CARCASS WEIGHT IN THREE ATLANTIC SALMON YEAR CLASSES
- 3:15 Hanping Wang**, Paul O'Bryant, Dean Rapp, Hong Yao, Christopher Hartleb, William Lynch  
STRATEGIES, RESPONSES AND PROSPECTS OF GENETIC IMPROVEMENT IN YELLOW PERCH
- 3:30 Terrence Tiersch**, E Hu  
MANAGEMENT OF GENETIC RESOURCES AND ESTABLISHMENT OF INDUSTRY STANDARDS THROUGH DOSE-BASED FERTILIZATION
- 3:45 Narayan Prasad Pandit**, Masaru Nakamura  
GROWTH PERFORMANCE AND GONADAL DEVELOPMENT OF HEAT-INDUCED STERILE NILE TILAPIA *Oreochromis niloticus*
- 4:00 Mohamed E. Megahed**  
ADOPTION OF DNA BARCODING IN FISHERIES AND AQUACULTURE IN EGYPT
- 4:15 Mohamed E. Megahed**  
MICROSATELLITE MARKER-BASED PEDIGREES IN SELECTIVE BREEDING OF CLOSED - THELYCUM SHRIMP *FenneroPenaeus indicus*

## NUTRITIONAL PHYSIOLOGY

Monday, February 10 1:30 - 4:30 Room 615

Chair: Madison Powell

- 1:30 Dan Bearden**, Miki Watanabe, Justin Yost, John W. Leffler, Tom Zeigler, Paul Sandifer, Mike Denson  
METABOLOMICS ANALYSIS FOR LOW-POLLUTING FEEDS
- 1:45 Rodrigue Yossa**, Olasupo Okubajo, Dayan A. Perera, Iniyavan Pushpalingam, Jonathan C. Eya  
INTERACTIVE EFFECTS OF DIETARY PROTEIN SOURCES, DIETARY LIPID LEVELS AND WATER TEMPERATURES ON GROWTH, FEED UTILIZATION, ENZYME ACTIVITIES AND GENE EXPRESSIONS IN RAINBOW TROUT

- 2:00 Karolina Kwasek**, Genciana Terova, Bong Joo Lee, Konrad Dabrowski  
DIETARY METHIONINE ALTERS THE EXPRESSION OF GENES INVOLVED IN ITS METABOLISM IN ATLANTIC SALMON LIVER
- 2:15 Andreas Brezas**, Madison Powell, Ken Overturf, Biswamitra Patro, Alejandro Villasante, Ronald Hardy  
EFFECTS OF AMINO ACID SUPPLEMENTATION ON EXPRESSION LEVELS OF AMINO ACID TRANSPORTERS AND SYNCHRONIZATION OF PROTEIN DIGESTION IN RAINBOW TROUT FED PLANT-BASED FEEDS
- 2:30 Meghan Manor**, Beth M. Cleveland, Gregory M. Weber, P. Brett Kenney  
EFFECTS OF FEEDING LEVEL AND SEXUAL MATURATION ON PPAR-, mTOR-, AND FATTY ACID-RELATED GENE EXPRESSION IN LIVER, MUSCLE, AND VISCERAL ADIPOSE TISSUE OF DIPLOID AND TRIPLOID FEMALE RAINBOW TROUT *Oncorhynchus mykiss*
- 2:45 Madison Powell**, Tracy Kennedy, Joyce Faler, Kenneth Overturf, Ronald Hardy  
GENE EXPRESSION IN RAINBOW TROUT *Oncorhynchus mykiss*, NILE TILAPIA *Oreochromis niloticus*, AND WHITE STURGEON *Acipenser transmontanus* ERYTHROCYTES UNDER DIFFERING GLYCEMIC CONDITIONS
- 3:00 Morris Villarroel**, Fernando Torrent, Javier Lopez-Luna  
SHORT-TERM FASTING HAS LITTLE EFFECT ON RAINBOW TROUT WELFARE OR FLESH QUALITY
- 3:15 Simeon O. Ayoola**, A. A. Idowu  
CYTOGENETIC EFFECT OF BLACK JAW TILAPIA *Sarotherodon melanotheron* EXPOSED TO PAWPAW LEAF *Carica papaya* L. IN FISH FEED AS REPLACEMENT FOR RICE BRAN
- 3:30 Justin Yost**, Daniel Bearden, John Leffler, Scott Snyder, Paul Sandifer, Michael Denson  
DECREASED NUTRIENT POLLUTION FROM AQUACULTURE FEEDS THROUGH IMPROVEMENTS IN PHOSPHORUS UTILIZATION BY RED DRUM *Sciaenops ocellatus*

## TOWN HALL ENGAGEMENT WITH FEDERAL AQUACULTURE PROGRAMS

Monday, February 10 3:00 - 4:30 Room 616

Chair: Jeff Silverstein

Moderator: Betsy Hart

This session provides an opportunity for direct dialogue with key aquaculture leaders and managers from diverse federal agencies with the goal of identifying critical issues, problems and/or opportunities for federal agencies to address in partnership with industry in 2014.

Interagency Working Group on Aquaculture and USDA/ARS (Jeff Silverstein) USDA/APHIS-Veterinary Services (TJ Myers), USDA/NASS (Bruce Boess), USDA Agricultural Marketing Service (Mark Bradley), USDA Office of the Secretary (Max Holtzman), FDA-Center for Veterinary Medicine (Jennifer Matysczak), FDA-Center for Food Safety and Applied Nutrition (Brett Koonse), NOAA Fisheries (Michael Rubino), USFWS (David Hoskins), and USGS (Jill Rolland).

## SPECIFIC EXAMPLES OF COMMUNITY EDUCATION/TRAINING AND STUDENT LEADERSHIP PROGRAMS DESIGNED TO PRESERVE AND ENHANCE THE AQUACULTURE INDUSTRY

Tuesday, February 11 8:30 - 10:00 Room 608

Chair: Debbie Granger

**Educate, Inspire, Motivate** – all necessary components of quality education/training programs required to preserve and enhance our aquaculture industry! Attend this session and hear about 5 significant programs to inspire & educate interested students and citizens to get the training, experience, knowledge, and leadership needed to pursue careers within the aquaculture sector. Whether your motive is to sustain the economic viability of coastal communities, inspire high school students to get involved, or to develop underutilized infrastructure for food production, this session provides realistic, hands-on education/training models and tools to adapt to your community's needs.

**8:30 Ray RaLonde**

- Overview of Career & Technical Education (CTE) Student Leadership Opportunities (CTSO) in Alaska – FFA – including the curriculum components in the high school, the student ag/aquaculture experiences, and the competitions (state & regional)
- NOAA Aquaculture Program – the hands-on, practical, and thorough Training Model & Modules developed for Alaska shellfish growers in coastal communities

**8:45 Kevin Fitzsimmons**

- FFA program and competition in Arizona & U. of Arizona
- Training/Continuing Education models at U. of Arizona (short courses, etc.)

**9:00 Earl Steele & Students from Bellingham Technical College Fisheries & Aquaculture Sciences Program**

– students discuss BTC's 2-year educational program training students to work in finfish & shellfish culture, habitat restoration, and more! With a 95% job placement rate, graduates now can also transfer directly to several 4-yr colleges to earn a baccalaureate.

## ENGINEERING

Tuesday, February 11 8:30 - 12:00 Room 618

Chairs: Ying Liu, Brian J. Vinci

**8:30 John Colt, Barnaby Watten, Tim Pfeiffer**  
CARBON DIOXIDE STRIPPING IN AQUACULTURE

**8:45 Ying Liu**  
THE STATUS AND FUTURE OF RECIRCULATING AQUACULTURE SYSTEMS IN CHIA

**9:00 Peifeng Liu, Jiazheng Shen, Songming Zhu**  
AN EXPERIMENTAL STUDY ON NITRIFICATION USING A SERIES ROTATING ELECTROBIOLOGICAL CONTACTORS

- 9:15 Cristian Cifuentes**, M. H. Kim  
NUMERICAL SIMULATION OF SHIELDING EFFECT IN NETS UNDER STEADY CURRENT
- 9:30 Andrew Davison**, Raul Piedrahita  
DESIGN OF A LAND-BASED TANK AQUACULTURE SYSTEM OPTIMIZED FOR YEAR-ROUND TEMPERATURE STABILITY TO MAXIMIZE GROWTH OF *Gracilaria pacifica*
- 9:45 Tomas Mosquera**, Raul H. Piedrahita  
EQUILIBRIUM AND SORPTION KINETICS OF AMMONIA BY NATURAL ZEOLITE IN SIMULATED AQUACULTURE WASTEWATER
- 10:00 BREAK**
- 10:30 Brian J. Vinci**, Trond W. Rosten, Kristian Henriksen, Erik Skontorp Hognes, Steven T. Summerfelt  
COMPARATIVE ECONOMIC AND ENVIRONMENTAL ANALYSIS OF LAND-BASED VERSUS NET PEN SALMON PRODUCTION
- 10:45 Fatemehsadat Fahandezhsadi**, Ronald Malone  
ASSIMILATION, BIOLOGICAL AMMONIA-NITROGEN REMOVAL IN ORNAMENTAL FISH HATCHERIES

## AQUACULTURE 101

Tuesday, February 11 8:30 - 12:30 Room 613

Chair: Kathleen Hartman

- 8:30 Christa Speekmann**, USDA APHIS  
AQUATIC EXPORTS TO CANADA – 101
- 9:00 George Sanders**, UW  
RECOMMENDATIONS FROM AN AQUATIC VETERINARIAN
- 9:30 Eric Cassiano**, UF TAL  
YOUR FISH ARE SPAWNING...NOW WHAT? ADVENTURES IN MARINE LIVE FEEDS
- 10:00 BREAK**
- 10:30 Larry Lawson**, UF TAL  
MANAGING AN AQUACULTURE FARM: FROM PERSONNEL TO PONDS AND MOST THINGS IN BETWEEN
- 11:00 Chris Bentley**, MAAT  
STANDING OUT IN THE CROWD – THE IMPORTANCE OF NICHE MARKETING IN SMALL SCALE AQUACULTURE
- 11:30 Sebastian Belle**, Maine Aquaculture Association  
BAD STUFF HAPPENS TO GOOD FARMERS; HOW TO LIMIT YOUR RISKS AND NOT REINVENT THE WHEEL
- 12:00 Jim Parsons**, Troutlodge  
THE MIDDLE GROUND: A CAREER SPENT TRANSLATING AQUACULTURE SCIENCE INTO ON-FARM SUCCESSES

# BIOFLOC TECHNOLOGY

Tuesday, February 11 8:30 - 12:30 Room 611

Chairs: Andrew Ray, Dariano Krumpfenauer

- 8:30 John Hargreaves**, Yoram Avnimelech, Hoang Tung, Craig Browdy  
SUMMARY OF THE RECENT WORKSHOP ON BIOFLOC TECHNOLOGY AND SHRIMP DISEASES IN HO CHI MINH CITY, VIETNAM
- 8:45 Bart Green**  
SOLIDS MANAGEMENT IN A CHANNEL CATFISH BIOFLOC TECHNOLOGY PRODUCTION SYSTEM
- 9:00 Yoram Avnimelech and Malka Kochba**  
EVALUATION OF OPTIMAL BIOFLOC CONCENTRATION
- 9:15 David E. Brune**  
BIOPROCESSING OF MICROBIAL BIOMASS ENABLING SUSTAINABLE MARINE SHRIMP PRODUCTION
- 9:30 John Leffler**, Jeff Brunson, Luis Poersch, Stacey Moller, Kevin Pitts  
DEVELOPMENT OF A MULTI-TROPHIC, BIOFLOC-BASED, POLYCULTURE SYSTEM FOR PRODUCTION OF MARINE SHRIMP, RED DRUM, AND OYSTERS
- 9:45 Luis Poersch**, John Leffler, Al Stokes, Jeff Brunson, Jacob Richardson, Kevin Pitts, Carlos Gaona  
SHRIMP CULTURE IN A BIOFLOC TECHNOLOGY (BFT) SYSTEM INTEGRATED WITH OYSTERS, TILAPIA, AND RED DRUM
- 10:00 BREAK**
- 10:30 Dariano Krumpfenauer**, André Freitas, Carlos Gaona, Luis H. Poersch, Wilson Wasielesky Jr.  
INFLUENCE OF AMMONIA ADDITION ON THE DEVELOPMENT OF MICROBIAL FLOCS ON *Litopenaeus vannamei* BFT NURSERY PHASE
- 10:45 Jack Crockett**, Jessica Morgan, Ivy McClellan, Addison Lawrence  
EVALUATION OF INORGANIC NITROGEN CONTROL BY COMPARING TWO ORGANIC CARBON APPLICATION RATES IN MINIMAL WATER EXCHANGE, BIOFLOC, SHALLOW WATER, SHRIMP NURSERY SYSTEMS USING SC FRUCTOOLIGOSACCHARIDE AS A CARBON SOURCE
- 11:00 Jack Crockett**, Jessica Morgan, Ivy McClellan, Addison Lawrence  
COMPARISON OF GROWTH IN MINIMAL WATER EXCHANGE, BIOFLOC, SHALLOW WATER, SHRIMP NURSERY SYSTEMS BY USING TWO FEEDING PROTOCOLS
- 11:15 Tzachi Samocha**, Leandro Castro, Wujie Xu, Terry Hanson, Tim Markey, Tzachi Samocha  
COMPARISON OF TWO COMMERCIAL FEEDS FOR THE PRODUCTION OF MARKETABLE *Litopenaeus vannamei* IN SUPER-INTENSIVE BIOFLOC-DOMINATED ZERO EXCHANGE RACEWAYS
- 11:30 Terry Hanson**, Leandro Castro, Tom R. Zeigler, Tim Markey, Tzachi M. Samocha  
ECONOMIC ANALYSIS OF A COMMERCIAL AND EXPERIMENTAL FEED USED IN BIOFLOC-DOMINATED, SUPER-INTENSIVE, *Litopenaeus vannamei* GROW-OUT RACEWAY SYSTEM – THE 2013 TRIAL

- 11:45 Wilson Wasielesky**, Plinio Furtado, Gabriel Alves, Dariano Krummenauer, Luis Poersch  
INFLUENCE OF HYDROGEN PEROXIDE ON *Litopenaeus vannamei* REARED IN BIOFLOC TECHNOLOGY SYSTEMS

## ADVANCES IN PADDLEFISH CULTURE AND MARKETING

Tuesday, February 11 8:30 - 12:30 Room 602

Chairs: Rafael Cuevas, William P. Auberry

- 8:30 Alex Squadrito**, Rafael Cuevas-Uribe, Steven Mims  
EFFECTS OF LIVE VERSUS COMMERCIALLY AVAILABLE PREPARED DIETS ON THE GROWTH AND SURVIVAL RATE OF POST LARVAL PADDLEFISH *Polyodon spathula*
- 8:45 Paul Auberry**, Rafael Cuevas-Uribe, Steven Mims  
COMPARATIVE MONOCULTURE OF HYBRID CATFISH AND PADDLEFISH IN KENTUCKY
- 9:00 Phillip Henderson**, Rafael Cuevas-Uribe, Steven D. Mims  
PRELIMINARY EVIDENCE ON THE CONTROL OF OFF-FLAVOR AND CYANOBACTERIA IN HYBRID CATFISH PONDS THROUGH BIOMANIPULATION USING PADDLEFISH
- 9:15 Godardo Juanich**, Rafael Cuevas-Uribe, Steven Mims  
WATER RECLAMATION FOR AQUACULTURE THROUGH OZONE AND/OR ULTRAVIOLET RADIATION TREATMENT
- 9:30 Daniel L. Aboagye**, Peter J. Allen  
EFFECTS OF ACUTE AND CHRONIC HYPOXIA ON THE METABOLIC AND ACID-BASE PARAMETERS OF THE AMERICAN PADDLEFISH *Polyodon spathula*
- 9:45 Ryan B. Shartau**, Daniel Aboagye, Peter J. Allen, Colin J. Brauner  
CO<sub>2</sub> TOLERANCE AND ACID-BASE REGULATION IN PADDLEFISH *Polyodon spathula*
- 10:00 BREAK**
- 10:30 Alex Philipchik**, Siddhartha Dasgupta  
MARKETING OF PADDLEFISH AMONG HISPANIC CONSUMERS
- 10:45 Siddhartha Dasgupta**  
ECONOMICS OF A SMALL-SCALE, VERTICALLY-INTEGRATED PADDLEFISH INDUSTRY



# TAURINE: CURRENT KNOWLEDGE AND FUTURE ROLES IN AQUACULTURE

Tuesday, February 11 8:30 - 12:30 Room 615

Chairs: Guillaume Salze, T. Gibson Gaylor

- 8:30 Wendy Sealey**, T. Gibson Gaylor, Guillaume Salze  
INTRODUCTION/OVERVIEW OF TAURINE AS INGREDIENT IN AQUACULTURE
- 8:45 Charlotte Conway**  
WHY WE NEED THE DATA FROM A REGULATORY PERSPECTIVE
- 9:00 Aaron Watson**, Jonathan Peake, Jessica Miller, Allen Place  
AN ANALYSIS OF TAURINE CONCENTRATIONS IN PREY ITEMS FROM WILD AND AQUACULTURE SETTINGS
- 9:15 Ronald B. Johnson**  
THE EFFECT OF SUPPLEMENTAL TAURINE ON GROWTH AND PROXIMATE COMPOSITION OF JUVENILE SABLEFISH *Anoplopoma fimbria* FED ALTERNATIVE PLANT PROTEIN FEEDS
- 9:30 Matt Hawkyard**, Ben Laurel, Yoav Barr, Kevin Stuart, Mark Drawbridge, Chris Langdon  
THE USE OF LIPOSOMES FOR THE ENRICHMENT OF ROTIFERS WITH TAURINE AND THEIR SUBSEQUENT EFFECTS ON THE GROWTH OF MARINE FISH LARVAE
- 9:45 Guillaume Salze**, Melanie Rhodes, D. Allen Davis  
ESTIMATION OF THE QUANTITATIVE REQUIREMENT FOR DIETARY TAURINE IN FLORIDA POMPANO *Trachinotus carolinus* JUVENILES
- 10:00 BREAK**
- 10:30 Guillaume Salze**, Melanie Rhodes, D. Allen Davis, Dave Jirsa, Mark Drawbridge  
EVALUATING TAURINE TOXICITY IN FLORIDA POMPANO *Trachinotus carolinus* AND WHITE SEABASS *Atractoscion nobilis*
- 10:45 Gibson Gaylor**, Delbert Gatlin, Frederic Barrows, Aaron Nistler, Camilo Pohlenz  
STABILITY OF SYNTHETIC TAURINE THROUGH EXTRUSION PROCESSING AND SUBSEQUENT BIOAVAILABILITY TO RAINBOW TROUT *Oncorhynchus mykiss*
- 11:00 Delbert Gatlin III**, Alejandro Velasquez, Rick Barrows, Gibson Gaylor  
ASSESSMENT OF TAURINE BIOAVAILABILITY IN PELLETTED AND EXTRUDED DIETS WITH RED DRUM *Sciaenops ocellatus*
- 11:15 Lus M. López**, Isaura Bañuelos-Vargas, Maricela Flores, Mario A. Galaviz, Conal D. True, Helena Peres  
TAURINE ROLE ON THE METABOLIC MODULATION OF *Totoaba macdonaldi* JUVENILE FEED SOY PROTEIN CONCENTRATES
- 11:30 Guillaume Salze**, Elizabeth Spangler, Paul Cobine, Melanie Rhodes, D. Allen Davis  
IDENTIFICATION OF BIOMARKERS OF TAURINE DEFICIENCY IN FLORIDA POMPANO *Trachinotus carolinus*
- 11:45 Aaron Watson**  
EFFECTS OF DIETARY TAURINE SUPPLEMENTATION ON POTENTIAL TAURINE SYNTHETIC CAPACITY IN JUVENILE SABLEFISH *Anoplopoma fimbria*

# REPRODUCTIVE PHYSIOLOGY

Tuesday, February 11 8:30 - 12:30 Room 620

Chairs: Brian Shepherd, Penny Swanson

TUESDAY

- 8:30 E Hu**, Terrence Tiersch  
STANDARDIZED ON-SITE CRYOPRESERVATION FOR REPOSITORY DEVELOPMENT IN AQUATIC SPECIES
- 8:45 Abi Abinawanto**, Zuraida Zuraida, Retno Lestari  
COMBINATION EFFECT OF 5% OF METHANOL AND SKIM MILK ON SPERMATOZOA QUALITY OF JAVA BARB *Barbonymus gonionotus* 24 HOURS AFTER SUB-ZERO FREEZING
- 9:00 Karina Morales-Ueno**, Jorge Alfaro-Montoya, Jorge A. Cáceres-Martínez, Eugenio Díaz-Iglesias, Héctor Castillo-Juárez, Carmen G. Paniagua-Chávez  
A NOVEL METHOD FOR THE TRANSPORTATION OF WHITE LEG SHRIMP *Penaeus vannamei* SPERMATOPHORES
- 9:15 Konrad Dabrowski**, MacKenzie Miller, Emily Hayes  
FISH EMBRYO DECHORIONATION – NEW APPROACH, NEW RESULTS, AND NEW OPPORTUNITIES
- 9:30 Tetsuzan Benny Ron**, Alon Naor  
EFFECTS OF MELATONIN AND LIGHT ON REPRODUCTION IN SEABREAM
- 9:45 Brian Shepherd**, Christopher B. Rees, Osvaldo J. Sepulveda Villet, Debra E. Palmquist, Fred P. Binkowski  
IDENTIFICATION OF GENDER IN YELLOW PERCH *Perca flavescens* USING EXTERNAL MORPHOLOGY
- 10:00 BREAK**
- 10:30 Nour Eissa**, Han-Ping Wang, Zhigang Shen, Hiam Elabd, Vikas Kumar, Paul O'Bryant, Dean Rapp, Hong Yao, ElSayed Abou-EIGheit, Adel Shaheen  
EFFECTS OF MATERNAL STRESS FROM DIFFERENT MATING SETS ON EGG QUALITY AND CHARACTERISTICS IN YELLOW PERCH: PHYSIOLOGICAL AND MOLECULAR ASPECTS
- 10:45 Craig V. Sullivan**, Robert W. Chapman, Benjamin J. Reading, Paul E. Anderson  
OVARIAN TRANSCRIPTOME RELIABLY PREDICTS EGG QUALITY IN WILD AND DOMESTICATED STRIPED BASS *Morone saxatilis*
- 11:00 Agnes Bardon-Albaret**, Kenneth L. Jones, Eric A. Saillant  
A RNA-SEQ ANALYSIS OF THE TRANSCRIPTOME OF UNFERTILIZED EGGS FROM WILD AND CAPTIVE RED SNAPPER FEMALES HORMONALLY INDUCED FOR OVULATION
- 11:15 Niha R. Chattopadhyay**, Sarbani Dutta  
RECENT UNDERSTANDING ABOUT THE ROLE OF PHOTO-THERMAL AND HORMONAL REGULATION ON MATURATION AND SPAWNING OF FISH
- 11:30 Nihar R. Chatterjee**, Sarbani (Dutta) Ray  
RECENT UNDERSTANDING ABOUT THE ROLE OF PHOTO-THERMAL AND HORMONAL REGULATION ON MATURATION AND SPAWNING OF FISH

- 11:45 Jay Dev Bista**, Bharat Shrestha, Ram Kumar Shrestha, Surendra Prasad, Arun Baidya, Madhav Kumar Shrestha, Tek Bahadur Gurung  
SPAWNING RESPONSE OF SAHAR *Tor putitora* IN DIFFERENT SEASONS UNDER POND REARED CONDITION IN POKHARA, NEPAL
- 12:00 Christianah Olaniyi**, Damilola Adeniyi  
EFFECT OF *Moringa oleifera* LEAF MEAL ON REPRODUCTIVE PERFORMANCE – HATCHABILITY, FECUNDITY, MILTS MOTILITY OF AFRICAN CATFISH
- 12:15 Marian Fairgrieve**, Elizabeth K. Smith, J. Adam Luckenbach  
EXPLORING POSSIBLE ROLES OF GONADAL KISSPEPTINS IN THE REPRODUCTIVE DEVELOPMENT OF SABLEFISH *Anoplopoma fimbria*

## HEALTH/DISEASE

Tuesday, February 11 8:30 - 2:00 Room 616

Chairs: Benjamin Beck, Eric Peatman

Sponsor: 

- 8:30 Eric Peatman**, Chao Li, Brian Peterson, Benjamin Beck  
MAPPING THE MICROBIOME OF ICTALURID CATFISH: TISSUE AND SPECIES-SPECIFIC COMMUNITY COMPOSITION
- 8:45 Victor Schmidt**, Katherine Smith, Linda Amaral-Zettler  
SALINITY ACCLIMATION YIELDS A REPEATABLE *Aeromonas – Vibrio* DOMINANCE SHIFT IN THE MICROBIOME OF A EURYHALINE FISH
- 9:00 Julia Pridgeon**, Phillip Klesius  
IDENTIFICATION, VIRULENCE, AND MASS SPECTROMETRY OF TOXIC ECP FRACTIONS OF WEST ALABAMA ISOLATES OF *Aeromonas hydrophila* OBTAINED FROM A 2010 DISEASE OUTBREAK
- 9:15 Kevin Snekvik**, Dan Bradway  
SURVEILLANCE TESTING FOR INFECTIOUS SALMON ANEMIA VIRUS IN THE PACIFIC NORTHWEST: THE LABORATORY PERSPECTIVE
- 9:30 Liqun Lu**, Lijuan Xu, Podok Patarida  
A NOVEL VIRAL DISEASE CAUSED BY CYPRINID HERPESVIRUS 2 INFECTION IN CRUCIAN CARP *Carassius auratus gibelio*
- 9:45 BREAK**
- 10:30 Wansadaj Jaroenram**, Jenny Elliman, Leigh Owens  
RAPID AND SENSITIVE DETECTION OF *Penaeus stylirostris* DENSOVIRUS BY RECOMBINASE POLYMERASE AMPLIFICATION COMBINED WITH A LATERAL FLOW DIPSTICK
- 10:45 Julia Pridgeon**, Phillip Klesius  
ATTEMPT TO DEVELOP LIVE ATTENUATED BACTERIAL VACCINES BY SELECTING RESISTANCE TO GOSSYPOL, PROFLAVINE HEMISULFATE, NOVIOBIOCIN, OR CIPROFLOXACIN

- 11:00 Benjamin H. Beck**, Chao Li, Bradley D. Farmer, Eric Peatman  
ANALYSIS OF THE *Flavobacterium columnare* TRANSCRIPTOME REVEALS GENE EXPRESSION SIGNATURES MEDIATING VIRULENCE
- 11:15 Hyun-Sil Kang**, Hyun-Ki Hong, Hee-Jung Lee, Taek-Kyun Lee, Young-Ok Kim, Kwang-Sik Choi  
MOLECULAR AND HISTOPATHOLOGIC SURVEY OF WILD PACIFIC OYSTER *Crassostrea gigas* ON THE SOUTH COAST OF KOREA
- 11:30 LUNCH**
- 1:00 Chika F. Ikeogu**, Charity I. Nsofor, Lucy A. Nwuba  
GILL PATHOLOGIC RESPONSES OF *Clarias gariepinus* TO SUBLETHAL CONCENTRATIONS OF LEAD NITRATE AND CRUDE OIL
- 1:15 Shahid Mahboob Rana**, F. Al-Misned, Z. Ahmad, Ghazala  
CHOLINESTERASE: CHOLINERGIC BIOMARKERS FOR THE DETECTION OF SUBLETHAL EFFECTS OF ORGANOPHOSPHORUS AND CARBMATES IN *Catla catla*
- 1:30 Julia Pridgeon**, Phillip Klesius  
DEVELOPMENT OF LIVE ATTENUATED *Streptococcus agalactiae* AS POTENTIAL VACCINES BY SELECTING FOR RESISTANCE TO SPARFLOXACIN

## ZEBRAFISH HUSBANDRY WORKSHOP - CONTINUED

Tuesday, February 11 8:30 - 4:30 Room 607

Chair: Bobbi Bauer

**FISH DISEASE PART I** – Coordinated by Dr. Michael Kent

- 8:30 Donna Mulrooney**  
PCR DIAGNOSTICS FOR IMPORTANT MYCOBACTERIA SPECIES IN ZEBRAFISH
- 8:50 Sean Spagnoli**  
ZIRC DIAGNOSTIC ACTIVITIES
- 9:10 Marcus Crim**  
ZEBRAFISH DIAGNOSTICS AT IDEXX BIORESEARCH
- 9:30 Justin Sanders**  
CYTOKINES AND CHRONIC DISEASE IN ZEBRAFISH

### WORKSHOP

- 9:50 Jennifer L. Strykowski**  
EFFECTIVENESS OF RECOMMENDED EUTHANASIA METHODS IN LARVAL ZEBRAFISH *Danio rerio*
- 10:10 BREAK**
- WORKSHOP**
- 10:30 Brandon Whipple**  
UNDERSTANDING ZEBRAFISH SALT SOURCES AND THEIR EFFECT ON Ph, HARDNESS, AND OSMOREGULARITY
- 10:50 Lauren Krug**  
THE IMPACT OF LIGHT EMITTED FROM EXIT SIGNS ON ZEBRAFISH REPRODUCTION

**11:10 Dan Castranova**

THE EFFECT OF HOLDING TANK SIZE AND SHAPE ON REPRODUCTIVE PERFORMANCE IN PAIR AND INDIVIDUALLY HOUSED ZEBRAFISH

**NUTRITION MINI-SESSION****11:30 Marc T. Tye**, Lisa A. Schimmenti

EVALUATION OF FEEDING NON-HATCHING DECAPSULATED BRINE SHRIMP *Artemia* sp. CYSTS TO JUVENILE AND ADULT ZEBRAFISH *Danio rerio*

**11:50 Maurine Hobbs**

ROTIFER REARING AND FEEDING PROTOCOL

**12:10 Abigail King**, Konrad Dabrowski

IS LIVE FOOD FEEDING AVOIDABLE? THE EFFECT OF COMMERCIAL FEED ON GROWTH AND REPRODUCTIVE CAPACITY OF ZEBRAFISH

**12:30 LUNCH****FISH DISEASES PART II** – Coordinated by Dr. Michael Kent**1:30 Chris Whipps**

MYCOBACTERIA IN ZEBRAFISH: RESOLVING STRAIN AND ISOLATE DIFFERENCES WITH *M. marinum*

**1:50 Michael Kent**

*IN SITU* TRACKING OF *Pseudoloma* IN LARVAL FISH; WHERE THE LIGHTS GO ON AND OFF

**2:15 BREAK****ENRICHMENT MINI-SESSION****2:30 Dante D'India**

IMPLEMENTING AN AQUATIC ANIMAL ENRICHMENT PROGRAM AT HARVARD MEDICAL SCHOOL

**2:50 Patty Oden**

COLOR PREFERENCES OF ZEBRAFISH, CAN THEY AFFECT MATING BEHAVIOR AND REPRODUCTIVE PERFORMANCE?

**3:10 Chereen Collymore**

ENVIRONMENTAL ENRICHMENT INFLUENCES PLACE PREFERENCE CHOICE IN SINGLE-HOUSED ZEBRAFISH

**IACUC MINI-SESSION****3:30 Stacy Pritt**

BRINGING IACUCs UP TO SPEED ON AQUATICS

**3:50 Monte Matthews**

IACUC IN THE AQUATIC AGE

**4:10 TBA****4:20 PANEL DISCUSSION****4:45 TOWN HALL MEETING**

**IMSEGI  
(INTERNATIONAL MARINE SHRIMP ENVIRONMENTAL  
GENOMICS INITIATIVE:  
MONITORING ECOSYSTEMS, ANIMALS AND PUBLIC HEALTH)**

Tuesday, February 11 8:30 - 5:00 Room 606

Chair: Acacia Alcivar-Warren

Moderators: Acacia Alcivar-Warren, Bruno Gomez-Gil

The IMSEGI session focus on the holistic theme of “ONE HEALTH: Conserving Healthy Ecosystems, to Maintain Healthy Animals, to Protect Human Health long-term”. Ecosystem Health topics include characterization of aquatic biodiversity, emerging pathogens (*Vibrio* spp.) and contaminants and climate change, species introductions, and endocrine disrupting chemicals (EDCs) such as metals, persistent organic pollutants (POPs: PCBs and PAHs) and non-POPs such as the herbicide glyphosate in mangrove sediment, water, shrimp and other aquatic species. Animal Health topics include diseases of shrimp/fish, EMS/AHPND by PCR and sequencing, mobile/transposable elements, heavy metal resistance in gut bacteria, horizontal gene transfer (HGT), epigenetics, antibiotics and antimicrobial resistance (AR), inbreeding and disease susceptibility, genome rearrangements, genetic pollution, and genetically engineered crops (GEs) in aquafeeds. Public Health issues include potential risks of AR and zoonotic diseases, GE crops and long-term effects on human health, and chronic diseases (insulin resistance, diabetes type 2, obesity, allergies, etc.) associated with consumption of seafood containing low-level EDCs such as metals, POPs, and non-POPs such as the herbicide glyphosate.

**Sponsors & Collaborators:** Environmental Genomics, Inc. (EGI), Southborough, MA 01772 USA; UNA SALUD/ONE HEALTH Genomics & Epigenetics Program, FUCOBI Foundation (Fundacion para la Conservacion de la Biodiversidad Acuatica y Terrestre), Quito, Ecuador.

**ECOSYSTEM HEALTH THEME – Moderators:** Acacia Alcivar-Warren, Bruno Gomez-Gil

**8:30 Acacia Alcivar-Warren**

IMSEGI SESSION AA2014: INTRODUCTION/WELCOME – UPDATE ON THE SHRIMP EPIGENOME PROJECT (shrimpENCODE)

**8:45 Acacia Alcivar-Warren** and IMSEGI collaborators

ONE HEALTH: EMS/AHPND, VIBRIOS, EDCs, HORIZONTAL GENE TRANSFER, GMOs, GENETIC POLLUTION, FOOD INSECURITY - WHO WILL SAVE THE WILD PACIFIC WHITELEG SHRIMP *Litopenaeus vannamei*?

**9:00 José A. Arreola-Lizárraga**, Ramón Barraza-Guardado, Ramón Casillas-Hernández, Francisco Magallón-Barajas, Marco Antonio López-Torres  
THE ECOSYSTEM APPROACH TO SHRIMP FARMING: AN ANALYSIS ON THE NW MEXICO

**9:15 Benjamin Moll**, Alberto Peña, Francisco Magallon, Elizabeth Cruz, Regina Elizondo  
SUSTAINABLE FARMING OF *Ulva* AND NATIVE BROWN SHRIMP IN MEXICO

**9:45 James Morris**, Pam Fuller, David Knott, Peter Kingsley-Smith, Christine Buckel, Leslie Hartman  
INVASION OF THE SOUTHEAST U.S. AND GULF OF MEXICO BY THE ASIAN TIGER SHRIMP *Penaeus monodon* FABRICIUS 1798

**10:00 BREAK**

**ECOSYSTEM AND ANIMAL HEALTH THEMES** – Moderators: Acacia Alcivar-Warren, Bruno Gomez-Gil

**10:30 Rashimi Ranjan Mishra**, Hrudaya N. Thatoi  
MICROBIAL COMMUNITY STRUCTURE IN MANGROVES AFFECTED BY  
AQUACULTURE AND OTHER INDUSTRIAL EFFLUENTS

**10:45 Timothy W. Flegel**, Chu-Fang Lo  
INTERIM PRIMERS FOR SPECIFIC DETECTION OF BACTERIAL ISOLATES THAT  
CAUSE ACUTE HEPATOPANCREATIC NECROSIS DISEASE (AHPND)

**11:00 Acacia Alcivar-Warren** and collaborators of THE SHRIMP EPIGENOME PROJECT  
(shrimpENCODE) CONSORTIUM  
IS EMS/AHPND A POTENTIAL RISK TO HUMAN HEALTH? A REVIEW OF  
EPIGENETIC MECHANISMS ASSOCIATED WITH EMERGING SHRIMP DISEASES  
AND ANTIBIOTIC RESISTANCE, AND A CALL FOR INCREASED FUNDING FOR  
BASIC RESEARCH ON THE SHRIMP EPIGENOME

**11:15 Bruno Gomez-Gil**, Sonia Soto-Rodríguez  
GENOMIC ANALYSES OF EMS-CAUSING STRAINS FROM MEXICO

**11:45 Roger W. Doyle**  
BY HOW MUCH DOES INBREEDING INCREASE THE RISK AND SEVERITY OF  
SHRIMP DISEASE EPIDEMICS?

**12:15 Nicholas Jeffery**, T. Ryan Gregory, Acacia Alcivar-Warren  
SYNERGY BETWEEN AQUACULTURE PROGRAMS, GENOME SIZE AND  
POLYPLIIDY ASSESSMENTS: BENEFITS FOR BOTH FIELDS

**12:30 LUNCH**

**ANIMAL AND HUMAN HEALTH THEMES** – Moderators: Bruno Gomez-Gil,  
Acacia Alcivar-Warren

**1:30 Tracey Schock**, Jessica R. Duke, Darryl Weldon, Jeff Brunson, John W. Leffler,  
Daniel W. Bearden  
BIOCHEMICAL CHANGES IN PACIFIC WHITE SHRIMP *Litopenaeus vannamei*  
DURING A SUPERINTENSIVE AQUACULTURE GROWOUT, AN NMR-BASED  
METABOLOMIC ANALYSIS

**2:00 David E. Brune**  
SUSTAINABLE MARINE SHRIMP PRODUCTION IN THE UNITED STATES: WATER  
QUALITY MANAGEMENT OPTIONS

**2:30 Brittany Holmes**, Terry Councell, Arlene Dunkin  
U.S. DEPARTMENT OF AGRICULTURE'S PESTICIDE DATA PROGRAM RESULT  
SUMMARY OF CHEMICAL RESIDUES IN SOYBEANS, CATFISH, AND SALMON

**3:00 Pedro Eslava Mocha**, Wilson Ramirez-Duarte, Edwin Gomez Ramirez,  
Leslie Guzman Beltran, Hernan Hurtado Giraldo  
PATHOLOGICAL EFFECTS OF SUBLETHAL EXPOSURES TO COMMERCIAL  
PRESENTATIONS OF GLYPHOSATE (ROUNDUP®) ON NATIVE FISH FROM THE  
COLOMBIAN ORINOCO

- 3:30 Diana Papoulias**  
CHEMICAL DISRUPTION OF NORMAL DEVELOPMENTAL AND REPRODUCTIVE PROCESSES IN CULTURED FISHES: IMPLICATIONS FOR HUMAN HEALTH
- 4:00 Nancy L. Swanson**  
GENETICALLY ENGINEERED CROPS AND THE DETERIORATION OF HEALTH IN THE UNITED STATES
- 4:30 ONE HEALTH – THE SHRIMP EPIGENOME (shrimpENCODE) CONSORTIUM**  
OPEN DISCUSSION: ON THE USE OF GMO SOYBEANS IN AQUAFEEDS - AND EXPERIMENTAL DESIGNS TO BE INCLUDED IN THE SHRIMP EPIGENOME PROJECT (shrimpENCODE) GRANT PROPOSAL

## OFFSHORE AQUACULTURE MONITORING REQUIREMENTS AND PROTOCOLS – WORKING TOWARDS ASSESSMENT OF IMPACTS AND REGIONAL STANDARDS

Tuesday, February 11 10:30 - 12:30 Room 609

Chairs: Tetsuzan Benny Ron, Alan Everson

- 10:30 Alan Everson**  
OVERVIEW OF EFFORTS TO STANDARDIZE MONITORING AND EXPEDITE PERMITTING FOR OFFSHORE AQUACULTURE IN HAWAII AND THE U.S. PACIFIC ISLANDS
- 10:45 Neil Anthony Sims**, Lisa Buck, Lorenzo Juarez, Nicole Kirchhoff, Jennica Lowell, Steven Page, Ken Robertson  
WHAT ARE YOU WORRIED ABOUT? WATER QUALITY MONITORING IN OPEN OCEAN AQUACULTURE AS IF SCIENCE MATTERS
- 11:00 James A. Morris Jr.**, Carol S. Price, Kenneth P. Riley  
ENVIRONMENTAL MONITORING FOR MARINE CAGE CULTURE: A GLOBAL PERSPECTIVE AND NATIONAL GUIDELINES
- 11:15 Jack Rensel**  
OPEN-OCEAN AQUACULTURE EFFECTS MONITORING: WORTHWHILE OR EFFECTIVE?
- 11:30 Michael Rust**, Kevin Amos, April Bagwill, Walton Dickhoff, Lorenzo Juarez, James Morris, Michael Rubino  
LEARNING FROM THE PINK FISH – CHANGES AND LESSONS FROM SALMON FARMING IN THE U.S.
- 11:45 Gavin Key**  
AT THE END OF OUR ROPE: DEVELOPING NEXT-GENERATION MARICULTURE ON A 4-KM SINGLE POINT MOORING
- 12:00 Tetsuzan Benny Ron**, Peter Becker, Gavin Burnell  
BUILDING COMMUNITY-BASED CMSP PROGRAMS WITH GIS MAPS OF LOCAL AND REGIONAL COASTAL USAGE PATTERNS
- 12:15 DISCUSSION**



# PREBIOTICS, PROBIOTICS AND IMMUNOSTIMULANTS

Tuesday, February 11 10:30 - 12:30 Room 604

Chairs: Sam Addo, Keith Filer

Sponsor:  Altech®

TUESDAY

- 10:30 Samuel Addo**, Donald A. Davis, Jeffery S. Terhune, Abel Carrias, Mark R. Liles  
SHORT-TERM FEEDING EFFECTS OF PROBIOTIC STRAINS AND THEIR COMBINATION ON IMMUNE PARAMETERS AND *Streptococcus iniae* SUSCEPTIBILITY IN NILE TILAPIA *Oreochromis niloticus*
- 10:45 Samuel Addo**, Jeffery S. Terhune, Donald A. Davis, Abel Carrias, Mark R. Liles  
LONG-TERM FEEDING EFFECTS OF THE PREBIOTIC PREVIDA® AND A PROBIOTIC STRAIN OF *Bacillus subtilis* ON GROWTH, IMMUNE PARAMETERS AND SUSCEPTIBILITY TO *Aeromonas hydrophila* INFECTION IN NILE TILAPIA *Oreochromis niloticus*
- 11:00 Alejandro Velasquez**, Delbert Gatlin  
EFFECTS OF PREVIDA® ON GROWTH PERFORMANCE OF JUVENILE RED DRUM *Sciaenops ocellatus* FED DIETS WITH DIFFERENT PROTEIN LEVELS
- 11:15 Mahmoud Dawood**, Shunsuke Koshio, Saichiro Yokoyama, Manabu Ishikawa  
EFFECTS OF HEAT-KILLED *Lactobacillus plantarum* (LP20) SUPPLEMENTAL DIETS ON GROWTH PERFORMANCE, STRESS RESISTANCE AND IMMUNE RESPONSE OF RED SEA BREAM *Pagrus major*
- 11:30 Giorgia Gioacchini**, Elia Ciani, Andrea Pessina, Ana Rodiles Guerrero, Daniel L. Merrifield, Francesca Maradonna, Ike Olivotto, Cinzia Cecchini, Helena D’Cotta, Jean-François Baroiller, Oliana Carnevali  
GROWTH AND APPETITE CONTROL DURING TILAPIA *Oreochromis niloticus* LARVAL DEVELOPMENT: ROLE OF A NEW PROBIOTIC FORMULATION
- 11:45 Chan Dara Khan**, D. Allen Davis, Jeffery S. Terhune, Karen L. Veverica, William H. Daniels  
THE POTENTIAL OF PONDTOSS™ AS A CONTROL OF COLUMNARIS IN TILAPIA *Oreochromis niloticus* AND ITS EFFECTS ON GROWTH PERFORMANCE
- 12:00 Keith Filer**, Vaun Cummins  
THE USE OF BIO-MOS® IN THE PRODUCTION OF AQUACULTURE SPECIES
- 12:15 Zoleykha Salaghi**, Mohamadreza Imanpoor, Vahid Taghi Zade  
THE EFFECT OF DIFFERENT LEVEL OF PRIMALAC PROBIOTIC ON SURVIVAL, HEMATOCRIT AND BIOCHEMICAL PARAMETERS IN PERSIAN STURGEON *Acipenser persicus* AFTER SALINITY STRESS

# LOW-COST FEED AND INPUT SOLUTIONS FOR SUSTAINABLE SMALL-SCALE AQUACULTURE IN DEVELOPING COUNTRIES

Tuesday, February 11 10:30 - 12:30 Room 608

Chairs: Hillary Egna, Kevin Fitzsimmons

TUESDAY

- 10:30 Narayan P. Pandit**, Madhav K. Shrestha, Nelson Pokhrel, James S. Diana  
EFFECT OF DIFFERENT FERTILIZATION AND FEEDING SYSTEMS ON WATER QUALITY AND GROWTH PERFORMANCE IN NILE TILAPIA *Oreochromis niloticus*
- 10:45 Ana Milstein**, Martha Hernández, Eucario Gasca-Leyva  
TESTING INDUCTION OF PERIPHYTON GROWTH AS A LOW-COST POSSIBILITY FOR SUSTAINABLE SMALL-SCALE TILAPIA CULTURE IN YUCATAN, MEXICO
- 11:00 Md. Abdul Wahab**, Md. Nazmush Sakib, Russell J. Borski  
EFFECT OF DIFFERENT FEEDING REGIMES ON GROWTH AND PRODUCTION PERFORMANCE OF AIR-BREATHING STINGING CATFISH, SHING *Heteropneustes fossilis* AND MAJOR CARPS IN POND POLYCULTURE
- 11:15 Russell J. Borski**, Evelyn Grace T. de Jesus-Ayson  
ALTERNATE DAY FEEDING IS MORE COST EFFECTIVE THAN DAILY FEEDING FOR CULTURE OF MILKFISH IN BRACKISHWATER PONDS AND SEA CAGES
- 11:30 Nazeel A. Madalla**, Omary D. Kitojo, Sebastian W. Chenyambuga  
EFFECT OF FEEDING LEVEL AND FREQUENCY ON PERFORMANCE OF *Oreochromis niloticus* FED DIETS CONTAINING MORINGA LEAF MEAL AND SUNFLOWER SEED CAKE
- 11:45 Caroline Nebo**, Maeli Dal Pai Silva, Maria Célia Portella  
MOBILIZATION AND RECOVERY OF ENERGY STORAGE IN NILE TILAPIA SUBMITTED TO FASTING AND REFEEDING
- 12:00 Daniel Adjei-Boateng**, Collins Duodu Prah, Regina E. Edziyie, Kwamena K. Quagrainie  
EFFECTS OF FERTILIZATION AND FEEDING LEVEL ON THE PRODUCTIVITY OF TILAPIA POND CULTURE IN GHANA
- 12:15 Julius O. Manyala**, Kevin Fitzsimmons, Charles C. Ngugi, Josiah Ani, Henry Lubanga  
ENHANCEMENT OF POND PRODUCTIVITY BY ORGANIC MANURE FERTILIZATION AND SUPPLEMENTARY FEEDING IN KENYA

# LOW-COST SOLUTIONS FOR SUSTAINABLE SMALL-SCALE AQUACULTURE IN DEVELOPING COUNTRIES

Tuesday, February 11 1:30 - 4:30 Room 608  
Chairs: Hillary Egna, Jenna Borberg, Stephanie Ichien

TUESDAY

- 1:30 Sunila Rai**, Sunil Poudel, Jiwan Shrestha  
PRODUCTION PERFORMANCE OF DEDHUWA *Esomus danricus* IN MONOCULTURE AND POLYCULTURE WITH CARP IN CHITWAN, NEPAL
- 1:45 John Walakira**, Joseph Molnar, Edith Nankya  
SUSTAINABLE STRATEGY FOR CONTROLLING FISH DISEASE CONDITIONS USING BANANA *Musa* sp. LEAF EXTRACTS IN UGANDA
- 2:00 Héry Coulibaly**  
ROLE OF COLLABORATING PROGRAMS IN AQUACULTURE DEVELOPMENT IN MALI
- 2:15 Yaw B. Ansah**, Emmanuel A. Frimpong  
PROFITABILITY OF TWO POND AQUACULTURE BEST MANAGEMENT PRACTICES IN GHANA
- 2:30 Emmanuel Frimpong**, Yaw Ansah, Steve Amisah, Daniel Adjei-Boateng  
USING ON-FARM EXPERIMENTS TO UNTANGLE THE CAUSES OF LOW PRODUCTIVITY OF TILAPIA *Oreochromis niloticus* GROWN IN PONDS IN GHANA
- 2:45 Iris Fynn**, Emmanuel Frimpong  
ESTIMATING THE ACTUAL AND POTENTIAL PRODUCTION CAPACITY OF AQUACULTURE PONDS IN GHANA
- 3:00 Christopher F. Knud-Hansen**  
AN ECOLOGICAL APPROACH TOWARDS OPTIMIZING POND-SPECIFIC FERTILIZATION EFFICIENCIES FOR SEMI-INTENSIVE AQUACULTURE
- 3:15 Bailey A. Keeler**, James S. Diana, Madhav Shrestha.  
STOCKING DENSITY ANALYSIS OF TWO SMALL INDIGENOUS SPECIES, PUNTI *Puntius sophore* AND DEDHUWA *Esomus danricus* TO IMPROVE SUSTAINABILITY OF TYPICAL SIX-SPECIES LARGE-CARP CULTURE SYSTEMS IN RURAL NEPAL
- 3:30 Jay D. Bista**, Madhav K. Shrestha, Surendra Prasad, Narayan P. Pandit  
ENVIRONMENTALLY FRIENDLY CAGE CULTURE: A SUCCESSFUL MODEL OF SMALL-SCALE AQUACULTURE FOR LIVELIHOOD OF FISHING COMMUNITIES IN NEPAL
- 3:45 Khalid Salie**, Claude E. Boyd, Neelia du Buisson, Bernard Snyman  
EVALUATION OF THE FUNCTIONING OF FARM DAMS IN CATCHMENTS IN THE STELLENBOSCH AREA OF SOUTH AFRICA
- 4:00 Sammy K. Macaria**, Kwamena Quagrainie, Charles Ngugi, Judy Amadiva  
AQUACULTURE PRODUCT DEVELOPMENT AND MARKETING INNOVATIONS FOR SUSTAINABLE SMALL-SCALE AQUACULTURE IN KENYA
- 4:15 Wilfrido Contreras-Sanchez**, Alejandro Mcdonal-Vera, Ulises Hernández-Vidal, Sergio Hernandez-Garcia.  
LOW COST PRODUCTION SYSTEMS FOR TROPICAL GAR *Atractosteus tropicus*

# SEAFOOD SAFETY, STANDARDS AND HUMAN HEALTH (GILLS)

Tuesday, February 11 1:30 - 3:30 Room 620

Chair: Roy Palmer

TUESDAY

- 1:30 Barbara Montwill**  
ENSURE THE SAFETY OF IMPORTED FOOD – U.S. FDA PROPOSED RULES
- 1:45 Brett Koonse**  
WHAT ARE OTHER COUNTRIES DOING ON AQUACULTURE FARMS TO ENSURE THEIR PRODUCTS ARE SAFE AND CONSISTENTLY HIGH QUALITY...AND PROTECTING THEIR INDUSTRY AND MARKET SHARE?
- 2:00 Antonio Garza de Yta**  
GILLS IN MEXICO – LATEST DEVELOPMENTS
- 2:15 Christopher Speed**  
AQUACULTURE – THE MISSING EQUATION TO TRULY IMPACT HUMAN HEALTH
- 2:45 Roy Palmer**  
SEAFOOD & HEALTH – THE IMPORTANCE OF AQUACULTURE
- 3:00 Changzheng Wang, Jiashuo Ma, Robert Durburow, Steven Mims, Lingyu Huang, Cecil Butler**  
USING ACIDIC ELECTROLYZED WATER TO REDUCE MICROBIAL LOAD ON HYBRID STRIPED BASS *Morone chrysops* × *M. saxatilis*
- 3:15 Hiroko Seki, Naoko Hamada-Sato**  
EFFECT OF VARIOUS SALTS ON IMP-DEGRADING ENZYME ACTIVITY IN AQUACULTURED COHO SALMON

## BIOACTIVES AND MODIFIERS

Tuesday, February 11 1:30 - 4:30 Room 604

Chair: Camilo Pohlenz

Sponsor: 

- 1:30 Armando Garcia-Ortega, Felipe Rodriguez-Moreno, Rosabel Velez de la Rocha, Maria Muy-Rangel, Lidia Robaina**  
EFFECT OF DIETARY SUPPLEMENTATION OF ASTAXANTHIN ON SKIN PIGMENTATION AND GROWTH IN SPOTTED ROSE SNAPPER *Lutjanus guttatus*
- 1:45 Jorge Fenucci, Emiliano Pisani, Ana Díaz, Susana Velurtas**  
EFFECT OF DIETARY CAROTENOIDS ON THE ARGENTINE SHRIMP BROODSTOCK *Pleoticus muelleri* BATE
- 2:00 Ghanshyam Nath Jha, Debajit Sarma, T. A. Qureshi, Trapti Jha**  
EFFECT OF BEETROOT *Beta vulgaris* AND APPLE *Pyrus malus* PEEL FORTIFIED DIETS ON GROWTH, BODY COMPOSITION AND TOTAL CAROTENOID CONTENT OF *Barilius bendelisis*

- 2:15** **Marcelo M. Pedreira**, Alcione E. Santos, Gustavo H. O. Mendes, Thaís G. Santos, Daiane K. A. Pereira, Naiara C. Motta, Guilherme de S. Moura, Maria L. F. Dias, Jose C. E. Santos  
LARVICULTURE OF *Prochilodus argenteus* CURIMATÁ-PACU WITH DIFFERENT COMMERCIAL DIETS AND FEEDING FREQUENCY
- 2:30** **Sergio Castillo**, Misael Rosales, Camilo Pohlenz, Delbert Gatlin  
THE EFFECTS OF CALCIUM LACTATE ON GROWTH PERFORMANCE AND DIGESTIVE ENZYMES ACTIVITY OF RED DRUM *Sciaenops ocellatus*
- 2:45** **Michal Wojno**, Arlyn Mandas, Andreas Lemme, Konrad Dabrowski  
EXPLORING THE EFFECT OF PLANT ATTRACTANTS ON CARP *Cyprinus carpio* PERFORMANCE
- 3:00** **Simeon Ayoola**, Adekunle Idowu  
EFFECT OF *Allium sativum* ON GROWTH, FEED UTILIZATION AND HAEMATOLOGICAL PARAMETERS OF *Clarias gariepinus* JUVENILE
- 3:15** **Diana Cuesta**, M. del Pilar Sánchez-Saavedra  
INCREASED GONAD GROWTH OF THE PURPLE SEA URCHIN *Strongylocentrotus purpuratus* FED WITH *Macrocystis pyrifera* AND *Ulva lactuca* ENRICHED WITH NUTRIENTS
- 3:30** **Malte Lohölter**, Susanne Kirwan, Angela Kuhn, Bernhard Eckel  
INFLAMMATION – A CHALLENGE IN FISH NUTRITION
- 3:45** **Craig L. Browdy**, Ei Lin Ooi, Pham Minh Anh, Dagoberto Sanchez, Francisco S. Gomes  
LABORATORY AND FIELD TRIALS ON PREVIDA® PREBIOTIC AND FISH HEALTH
- 4:00** **Joy M. Campbell**, Enric Gisbert, Ali Skalli, M. M. Solovyev, C. Rodriguez, J. Polo  
DIETARY SPRAY-DRIED PLASMA NOT ONLY PROMOTES GROWTH BUT ALSO IMPROVES THE IMMUNOLOGICAL AND REDOX STATUS IN GILTHEAD SEA BREAM
- 4:15** **Camilo Pohlenz**, Brian Ray, Delbert M. Gatlin III  
OPTIMIZATION OF A PLANT-BASED DIET FOR RED DRUM *Sciaenops ocellatus* WITH THE INCLUSION OF A YEAST CELL WALL EXTRACT: EFFECTS ON GROWTH AND INNATE IMMUNE PERFORMANCE

## LIPIDS IN AQUACULTURE NUTRITION AND PHYSIOLOGY

Tuesday, February 11 1:30 - 4:30 Room 609

Chairs: Jesse Trushenski, Rebecca Lochmann

- 1:30** **Christian Minjarez-Osorio**, Mayra L. González-Félix, Martín Perez-Velazquez, Perla Urquidez-Bejarano  
DIETARY LIPID REQUIREMENT OF JUVENILE GULF CORVINA *Cynoscion othonopterus* RAISED IN A RECIRCULATING AQUACULTURE SYSTEM
- 1:45** **Biswamitra Patro**, Ronald W. Hardy  
PHOSPHOLIPID SUPPLEMENTATION IN AN ALL-PLANT PROTEIN DIET FOR JUVENILE RAINBOW TROUT

- 2:00 Artur N. Rombenso**, Jesse T. Trushenski, Michael Schwarz, Steve Urick  
SUCCESSFUL PARTIAL FISH OIL REPLACEMENT IN JUVENILE POMPANO FEEDS CONTAINING DIFFERENT OIL SOURCES
- 2:15 Andrew Maina**, Rebecca Lochmann  
FINISHING PERIOD REQUIRED TO PRODUCE CLA-ENHANCED CATFISH FILLETS AS A FUNCTIONAL FOOD
- 2:30 Mayra González-Félix**, Martin Perez-Velazquez, Edith López-Yocupicio  
EFFECT OF DIETARY LEVEL OF DOCOSAHEXAENOIC AND ARACHIDONIC ACIDS, AND n-3/n-6 RATIO ON BIOLOGICAL PERFORMANCE AND TISSUE COMPOSITION OF THE GULF CORVINA *Cynoscion othonopterus*
- 2:45 Artur N. Rombenso**, Jesse T. Trushenski, Dave Jirsa, Mark Drawbridge  
DHA AND ARA ARE ESSENTIAL TO MEET LC-PUFA REQUIREMENTS FOR JUVENILE YELLOWTAIL
- 3:00 Konrad Dabrowski**, Malgorzata Korzeniowska, John Grayson, Karolina Kwasek, Michal Wojno  
EFFECT OF LIVE FOOD ENRICHMENT WITH DHA AND ARA ON YELLOW PERCH LARVAE LIPIDS AND FATTY ACID COMPOSITION
- 3:15 Michele Thompson**, Steven Rawles, Rebecca Lochmann  
THE EFFECTS OF MENHADEN OIL, FLAXSEED OIL AND A DAIRY-YEAST PREBIOTIC ON GROWTH, HEALTH, FEED CONVERSION, SURVIVAL, CRITICAL MAXIMUM TEMPERATURE, AND BODY COMPOSITION OF SUNSHINE BASS
- 3:30 Gurpreet Sehgal**, Jasmine Dhawan, Harjeet Sehgal  
EFFECTS OF DIETARY LIPID AND WATER ALKALINITY LEVELS ON UTILIZATION OF A NATURAL CAROTENOID SOURCE, *Spirulina platensis* FOR COLOUR ENHANCEMENT IN GOLD FISH *Carassius auratus*

## MULTITROPHIC AQUACULTURE

Tuesday, February 11 1:30 - 4:30 Room 611

Chair: George Brooks, Jr.

- 1:30 Suzanne Boxman**, Brian McCarthy, Fei Zhong, Sarina Ergas, Maya Trotz, Andres Tejada-Martinez, Kevan Main  
MODELLING NITROGEN TRANSFORMATIONS IN A PILOT SCALE MARINE INTEGRATED AQUACULTURE SYSTEM
- 1:45 Michael Chambers**, Jessica Cranney, Jon Bunker, Win Watson, Huntting Howell  
SMALL SCALE INTERGRATED MULTI-TROPHIC AQUACULTURE OF STEELHEAD TROUT *Oncorhynchus mykiss*, BLUE MUSSELS *Edulis mytilus* AND SUGAR KELP *Laminaria saccharina* FOR COASTAL FISHERS IN NEW HAMPSHIRE, USA
- 2:00 Susan Laramore**, Richard Baptiste, Bryan Gordan, Paul Wills, Dennis Hanisak  
INCORPORATION OF THE SEAWEED *Ulva lactuca* PRODUCED IN A LAND BASED IMTA SYSTEM AS A SUPPLEMENT OR PARTIAL REPLACEMENT FOR PELLETED DIETS IN THE PRODUCTION OF JUVENILE SHRIMP *Litopenaeus vannamei*
- 2:15 Abdul Mateen**, Shahzad Maqsood Ahmad Basra, Saba Mahmood  
GROWTH PERFORMANCE AND BODY COMPOSITION OF *Labeo rohita* AND *Oreochromis niloticus* UNDER REDUCED HARDNESS BY USING *Moringa olifera*

- 2:30 Joseph Brooker**, John Scarpa, Paul Wills  
DISTRIBUTION OF SURPLUS MICROALGAE IN A LAND-BASED INTEGRATED MULTI-TROPHIC AQUACULTURE SYSTEM
- 2:45 Scott Lindell**, Jang Kim, Emma Green-Beach, Molly Peach, Morgan Beals, Charlotta Jornlid, Ashley Harrigan, Charles Yarish  
CULTURING SEAWEED *Gracilaria tikvahiae* ON A OYSTER FARM IN WAQUOIT BAY, MASSACHUSETTS
- 3:00 Louis Landesman**, Tamra Fakhoorian  
USING RETIRED CATFISH PONDS TO GOW DUCKWEED *Lemna turionifera* FOR NICHE MARKETS

## RECIRCULATING AQUACULTURE SYSTEMS

Tuesday, February 11 1:30 - 4:30 Room 618

Chair: Songming Zhu

- 1:30 Steven Van Gorder**, Jura Jug-Dujakovic  
AN EVALUATION AND COMPARISON OF THE BIOFILTRATION PERFORMANCE CHARACTERISTICS OF THE ROTATING BIOLOGICAL CONTACTOR (RBC) AND THE MOVING BED BIOREACTOR IN RECIRCULATING AQUACULTURE SYSTEMS
- 1:45 Xian Li**, Jean Paul Blancheton, Ying Liu  
EFFECT OF OXIDATION-REDUCTION POTENTIAL ON PERFORMANCE OF EUROPEAN SEABASS IN RECIRCULATING AQUACULTURE SYSTEMS
- 2:00 Kuoqiu Yan**, Kun Xiang  
CONSTRUCTION TECHNOLOGY ON RAS FOR RAINBOW TROUT SEEDLING CULTURE
- 2:15 KC Hosler**  
TASTE OF BC AQUAFARMS MODEL TROUT FARM RAS SYSTEM INTEGRATES NEW TECHNOLOGIES AND LOW HEAD SYSTEMS FOR COST EFFECTIVE AND DUPLICATABLE COMMERCIAL PRODUCTION
- 2:30 Paul Wills**, Christopher Robinson, Christopher Wilson  
TESTS OF THREE PILOTS SCALE DEVICES TO CONTROL THE FLAVOR TAINTING COMPOUNDS 2-METHYLISOBORNEOL AND GEOSMIN IN RECIRCULATING AQUACULTURE SYSTEMS
- 2:45 Steven Summerfelt**, Timothy Pfeiffer, Lauren Jescovitch, Ethan Metzger, Dane Schiro  
EFFICIENCY OF LOW-LIFT PUMPING AND AERATION PROCESSES USED TO GAS BALANCE WATER AT THE SIDE OF CIRCULAR TANKS
- 3:00 John Davidson**, Kevin Schrader, Bruce Swift, Eric Ruan, Jennifer Aalhus, Manual Juarez, Christopher Good, William Wolters, Gary Burr, Steven Summerfelt  
EVALUATING DEPURATION PROCEDURES TO MITIGATE OFF-FLAVOR FROM HARVEST SIZE ATLANTIC SALMON *Salmo salar* CULTURED IN A LAND-BASED RECIRCULATING AQUACULTURE SYSTEM

- 3:15 Christopher Good**, John Davidson, Ryan Earley, Elizabeth Lee, Gregory Weber, Steven Summerfelt  
EFFECTS OF WATER EXCHANGE RATE AND TREATMENT PROCESSES ON WATER-BORNE HORMONES IN RECIRCULATION AQUACULTURE SYSTEMS CONTAINING SEXUALLY MATURING ATLANTIC SALMON *Salmo salar*

## SABLEFISH

Tuesday, February 11 1:30 - 4:30 Room 602

Chairs: Rick Goetz, Adam Luckenbach

- 1:30 George Nardi**  
AN UPDATE ON THE STATUS OF COMMERCIAL SABLEFISH CULTURE IN NORTH AMERICA
- 1:45 Kenneth C. Massee**, Thomas H. Wade, Matthew A. Cook, Cortney Jensen, Frederick W. Goetz  
SABLEFISH BROODSTOCK COLLECTION METHODOLOGIES FOR USE IN AQUACULTURE
- 2:00 Jose Guzman**, Adam Luckenbach, Frederick Goetz, Mollie Middleton, Penny Swanson  
CHARACTERIZATION OF THE REPRODUCTIVE PHYSIOLOGY OF SABLEFISH: DEVELOPMENT OF APPROACHES TO OVERCOME THE BLOCK TO PUBERTY
- 2:15 Samuel Sanchez**, Carmen Paniagua-Chavez, Charles Weirich, Manuel Segovia  
CRYOPRESERVATION OF SABLEFISH *Anoplopoma fimbria* SPERM AS AN STRATEGY TO DRIVE ITS CULTURE IN MEXICO
- 2:30 Douglas Immerman**, Frederick Goetz  
SABLEFISH *Anoplopoma fimbria* SPERM: THE PHYSIOLOGY OF ACTIVATION AND THE DEVELOPMENT OF A CRYOPRESERVATION PROTOCOL
- 2:45 William Fairgrieve**, Adam Luckenbach  
CHARACTERIZATION OF SEX-SPECIFIC GROWTH IN FARMED SABLEFISH *Anoplopoma fimbria*
- 3:00 J. Adam Luckenbach**, William T. Fairgrieve  
PROGRESS TOWARD THE GENERATION OF MONOSEX SABLEFISH FOR AQUACULTURE – COMPLETE SEX INVERSION OF JUVENILES VIA DIETARY STEROID TREATMENT
- 3:15 Matthew Cook**, Jonathan Lee, Kenneth Massee, Thomas Wade, Sean Oden, Cort Jensen, Frederick Goetz  
THE EFFECT OF REARING TEMPERATURE ON GROWTH AND SURVIVAL OF SABLEFISH *Anoplopoma fimbria* LARVAE
- 3:30 Jonathan Lee**, Matthew A. Cook, Tom Wade, Barry A. Berejikian, Frederick W. Goetz  
DEVELOPMENT OF SMALL REPLICABLE TANKS FOR SABLEFISH AQUACULTURE RESEARCH: EFFECTS OF LIGHT INTENSITY AND FEED DENSITY



- 3:45 Ronald B. Johnson**, Shin-Kwon Kim, Aaron M. Watson, Frederic T. Barrows, Eric L. Kroeger, Peter J. Nicklason, Lisa C. Armbruster, Frank C. Sommers, Thomas M. Scott  
THE EFFECT OF SUPPLEMENTAL TAURINE ON GROWTH AND PROXIMATE COMPOSITION OF JUVENILE SABLEFISH *Anoplopoma fimbria* FED ALTERNATIVE PLANT PROTEIN FEEDS
- 4:00 Aaron Watson**, Ronald Johnson, Shin-Kwon Kim, Lisa Armbruster, Kenneth Webb, Allen Place  
EFFECTS OF DIETARY TAURINE SUPPLEMENTATION ON POTENTIAL TAURINE SYNTHETIC CAPACITY IN JUVENILE SABLEFISH *Anoplopoma fimbria*

## STRIPED BASS GROWERS ASSOCIATION INDUSTRY FORUM

Tuesday, February 11 1:30 - 4:30 Room 615

Moderator: Jim Ekstrom

- 1:30 Jim Ekstrom**, Ekstrom Enterprises  
WALTER LANDRY MEMORIAL AWARD
- 1:45 Mike Freeze**, Keo Fish Farms, Inc.  
UPDATES FROM THE NATIONAL AQUACULTURE ASSOCIATION
- 2:00 Christa Speekmann**, USDA/APHIS/VS  
THE STATUS OF HYBRID STRIPED BASS BEING EXPORTED INTO CANADA
- 2:15 Jim Bowker**, USFWS  
RESEARCH SUPPORTING FDA APPROVAL OF AQUI-S20E AND UPDATES ON APPROVALS FOR AQUAFLOL AND CHLORAMINE-T
- 2:30 Delbert Gatlin**, Texas A&M University  
UPDATE ON NUTRITION RESEARCH AT TEXAS A&M UNIVERSITY
- 2:45 Adam Fuller**, SNARC  
UPDATE ON SNARC HYBRID STRIPED BASS RESEARCH
- 3:00 Jesse Chappell**, Auburn University  
THE CULTURE OF HYBRID STRIPED BASS IN AN IN-POND RACEWAY SYSTEM
- 3:15 Jesse Trushenski**, Southern Illinois University  
UPDATE ON HYBRID STRIPED BASS RESEARCH AT SIU
- 3:30 Carole Engle**, University of Arkansas at Pine Bluff  
UPDATE ON HYBRID STRIPED BASS RESEARCH AT UAPB
- 3:45 Anita Kelly**, University of Arkansas at Pine Bluff  
2013 U.S. HYBRID STRIPED BASS INDUSTRY SURVEY
- 4:00 STRIPED BASS GROWERS ASSOCIATION ANNUAL MEETING AND SBGA BOD MEETING**

## USTFA

Tuesday, February 11 1:30 - 4:30 Room 613

Chair: Sean Nepper, USTFA President

TUESDAY

- 1:30 Sean Nepper**  
USTFA UPDATE
- 1:45 Jim Bowker**  
USFWS AQUACULTURE DRUG APPROVAL FOR TROUT
- 2:00 Kyle Martin**  
EVALUATION OF FLAVOBACTER RESISTANT STRAIN OF RAINBOW TROUT
- 2:15 Jeff Hinshaw**  
*Weissella* UPDATE
- 2:30 Gary Fornshell**  
BIOSECURITY ON A FARM LEVEL
- 3:30 USTFA BOD MEETING – OPEN TO GENERAL MEMBERSHIP**

## WEDNESDAY, February 12

### EDUCATION

Wednesday, February 12 8:30 - 10:00 Room 604

Chair: David Cline

- 8:30 David Cline**  
BUILDING A BETTER POWER POINT PRESENTATION
- 8:45 Joseph Molnar, E. William Tollner**  
USING CELL PHONES TO ADVANCE AQUACULTURE DEVELOPMENT IN AFRICA:  
MODELS AND STRATEGIES FOR IMPLEMENTATION
- 9:00 Tosan Fregene, Francisca Oraemeka**  
IMPACT OF FARMER FIELD SCHOOL (FFS) IN EXTENSION DELIVERY ON  
AQUACULTURE DEVELOPMENT IN OYO STATE, NIGERIA
- 9:15 Tetsuzan Benny Ron, Glenn Martinez, Barbara McLain**  
A NOVEL INTEGRATED AQUAPONICS TRAINING PROGRAM FOR THE PACIFIC  
ISLANDERS
- 9:30 David Cline**  
REACHING THE NEXT GENERATION OF AQUACULTURISTS THROUGH YouTube  
VIDEOS
- 9:45 Roy Palmer**  
AquaEd – GLOBAL PLATFORM FOR EDUCATION

## FRESHWATER FISH CULTURE

Wednesday, February 12 8:30 - 12:30 Room 611

Chairs: Luke Roy, Brian Ham

- 8:30 Luke A. Roy**, Anita M. Kelly, Carole R. Engle, Nathan Stone  
UNUSUAL FISH LOSSES OF FATHEAD MINNOWS, GOLDEN SHINERS, AND BREAM  
IN ARKANSAS DURING THE WINTER OF 2012/2013
- 8:45 Brian Ham**, Chris A. Myrick, Frederic T. Barrows, Glenn Duff, Carl Yeoman,  
Mark Maskill, Wendy M. Sealey  
EVALUATION OF THE EFFECT OF PELLET TYPE ON GROWTH OF SNAKE RIVER  
CUTTHROAT TROUT *Oncorhynchus clarki bouveieri*
- 9:00 Thomas Harder**, Gordon G. Gotsch, Robert C. Summerfelt  
GROWTH RESPONSE OF TANK-CULTURED WALLEYES *Sander vitreus* IN A WATER  
REUSE AQUACULTURE SYSTEM AFTER FOUR MONTHS OF COLDBANKING
- 9:15 Vikas Kumar**, Han-Ping Wang, Zhigang Shen, Nour Eissa, Hong Yao, Hiam Elabd,  
Dean Rapp, Paul O'Bryant  
NUTRITIONAL QUALITY OF DIFFERENT STRAINS OF YELLOW PERCH:  
IMPLICATIONS TO HUMAN NUTRITION
- 9:30 Muhammad Samee Mubarik**, Bilal Ahmad, Naureen Aziz Qureshi,  
Syed Makhdoom Hussain  
SURVIVAL OF *Oreochromis niloticus* UNDER TREATED WASTE WATER
- 9:45 Christianah Olaniyi**, Emmanuel Alalade, Rashidat Shittu  
HATCHABILITY AND SURVIVAL OF AFRICAN CATFISH FRIES USING DIFFERENT  
SOURCES OF WATER
- 10:00 BREAK**
- 11:00 Jacky Phosa**  
INVESTIGATION ON THE PERFORMANCE OF FISH LARVAE REARING FACILITIES  
AT TURFLOOP FISH HATCHERY IN LIMPOPO PROVINCE, SOUTH AFRICA
- 11:15 David García-Mondragón**, Iván Gallego-Alarcón, Laura White-Olascoaga,  
Daury García-Pulido, Angélica Espinoza-Ortega, Anastacio García-Martínez,  
Carlos M. Arriaga-Jordán  
CHARACTERIZATION OF RAINBOW TROUT *Oncorhynchus mykiss* PRODUCTION  
SYSTEMS IN THE MEXICAN HIGHLANDS
- 11:30 Iván Gallego-Alarcón**, Selene Ortíz-Velázquez, Cristina Burrola-Aguilar,  
Iván Cervantes-Zepeda, Daury García-Pulido  
ASSESSMENTS OF RAINBOW TROUT *Oncorhynchus mykiss* ALBINO BREED IN A  
RECIRCULATING AQUACULTURE SYSTEM
- 11:45 Bartholomew W. Green**, Steven D. Rawles, T. Gibson Gaylord,  
Frederick T. Barrows, Catherine J. Childress and Matthew E. McEntire  
USE OF DIETS FORMULATED FOR SUMMER WATER TEMPERATURES IN POND  
PRODUCTION OF HYBRID STRIPED BASS

WEDNESDAY

## OFFSHORE AQUACULTURE

Wednesday, February 12 8:30 - 12:30 Room 618

Chair: Jennica Lowell

- 8:30 Adi Kellermann**  
THE INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA (ICES) AND ITS ROLE FOR MARINE AQUACULTURE
- 8:45 Paul Olin**, Randy Lovell  
OFFSHORE MARINE FINFISH AQUACULTURE IN CALIFORNIA: DREAM OR NIGHTMARE?
- 9:00 Jennica C. Lowell**  
ENVIRONMENTAL MONITORING WORKS! HAWAII'S REGULATORY FRAMEWORK AND RESULTS FROM THE REQUIRED WATER QUALITY AND BENTHIC MONITORING OF AN OFFSHORE FINFISH FARM
- 9:15 Bruno Sardenberg**, Daniel D. Benetti, Carlos Lara, Rolando P. Lutz, Yole Buchalla, Thiago Soligo, Alexander Larranaga, Leonardo Acuña, Jorge Suarez  
DEVELOPMENT AND IMPLEMENTATION OF VERTICALLY-INTEGRATED AQUACULTURE OF PACIFIC RED SNAPPER *Lutjanus guttatus* IN COSTA RICA
- 9:30 Dallas Meggitt**, Gary Loverich  
AUTONOMOUS, UNATTENDED WAVE-POWERED ENERGY SYSTEMS FOR OFFSHORE AQUACULTURE
- 9:45 Matthew Koskela**, Stephen Page, Gabriel Matthias  
HYDRAULIC FEED DISTRIBUTION FOR SUBMERGED OPEN OCEAN NET PENS
- 11:00 Federico Rotman**, Michael Cremer, Constance Silbernagel, Mark Drawbridge  
THE USE OF FINE-MESH COPPER ALLOY CAGES FOR NURSERY PRODUCTION OF WHITE SEABASS *Atractoscion nobilis*
- 10:00 BREAK**
- 11:15 Terry Drost**  
SOLUTIONS FOR NET MANAGEMENT IN OFFSHORE CONDITIONS
- 11:30 Brandon Sackmann**, Tarang Khangaonkar, Christopher Krembs  
DEVELOPING HI-RESOLUTION SATELLITE PRODUCTS TO SUPPORT MARINE AQUACULTURE: BRINGING FARM-SCALE APPLICATIONS INTO FOCUS

## SUSTAINABLE AQUACULTURE

Wednesday, February 12 8:30 - 12:30 Room 608

Chair: Jonathan Van Senten

- 8:30 Ole Torrissen**  
THE ENVIRONMENTAL COSTS OF NORWEGIAN SALMON FARMING IN A RETROSPECTIVE PERSPECTIVE
- 8:45 Ian Forster**, Biswajit Biswas, Lawrence Albright, Mahmoud Rowshandeli  
CYCLICAL FEEDING STRATEGY TO REDUCE ENVIRONMENTAL IMPACT OF MARINE SALMON FARMING

- 9:00 Liping Liu**, Wenbo Zhang, Francis Murray, David Little, Peter Edwards  
RECENT TRENDS AND FUTURE PROSPECTS IN PRODUCTION AND INTERNATIONAL TRADE OF CHINESE FARMED SEAFOOD
- 9:15 Ivan Cervantes-Zepeda**, Iván Gallego-Alarcón, Daury García-Pulido, Carlos Díaz-Delgado, Anastacio García-Martínez, Luz M. García-Sánchez  
ADVANCES IN THE SUSTAINABILITY EVALUATION OF THE MEXICAN AQUACULTURE
- 9:30 Héry Coulibaly**, Bourema Traore, Seydou Toe  
ROLE OF COLLABORATING PROGRAMS IN AQUACULTURE PRACTICE IN DEVELOPING COUNTRY
- 9:45 BREAK**
- 11:00 Jonathan van Senten**  
THE DEVELOPMENT OF THE FAO CODE OF CONDUCT FOR RESPONSIBLE FISHERIES (CCRF) AQUACULTURE QUESTIONNAIRE
- 11:30 Tosan Fregene**, Tosin Fabowale  
CULTURED FISH SUPPLY CHAIN AND CONSTRAINTS OF ACTORS ALONG THE CHAIN IN OGUN STATE, NIGERIA
- 11:45 Mohamed E. Megahed**  
EMERGING PROBLEMS WITH RECENT INTRODUCTION OF INDIAN WHITE SHRIMP *Fenneropenaeus indicus* IN EGYPT

## WATER QUALITY

Wednesday, February 12 8:30 - 12:30 Room 609

Chair: John Farrelly

- 8:30 John Farrelly**, Yushun Chen, Sagar Shrestha, Matthew Recsetar, David Heikes, Carole Engle  
WATER QUALITY IN SPLIIT, INTENSIVELY AERATED, AND TRADITIONAL EARTHEN PONDS IN SOUTHEAST ARKANSAS
- 8:45 Li Zhou**, Claude E. Boyd  
FERTILIZATION OF PONDS FOLLOWING SEDIMENT REMOVAL
- 9:00 Hisham Abdelrahman**, Li Zhou, Claude E. Boyd  
EFFECTS OF AERATION ON WATER TEMPERATURE AND POND EVAPORATION
- 9:15 Li Zhou**, Claude E. Boyd  
TOTAL AMMONIA NITROGEN REMOVAL BY ZEOLITE IN LABORATORY TRIALS
- 9:30 Shibo Gao**, Peilun Lin, Zonglou Guo, Wei Wang  
REMOVAL EFFICIENCY OF CHLORPYRIFOS, BPA AND 4-NP IN SUBSURFACE FLOW CONSTRUCTED WETLANDS
- 9:45 Julio Enrique Ramos Chávez**, Carmen Paniagua Chávez, Manuel A. Segovia  
EFFLUENT TREATMENT OF A RECIRCULATING AQUACULTURE SYSTEM WITH DIFFERENT STRAINS OF MICROALGAE AND CYANOBACTERIA

10:00 **BREAK**

11:00 **Rick Johnson**  
SUSTAINABILITY THROUGH ADVANCED BIOLOGICAL TREATMENT OF MARINE RECIRCULATING AQUACULTURE SYSTEM EFFLUENT

11:15 **Juan Pablo Gonzalez Hermoso**, Emilio Peña Messina, Manuel A. Segovia  
ENHANCED BIOREMEDIATION OF WASTEWATER FROM A RECIRCULATING AQUACULTURE SYSTEM USING FOUR DIFFERENT PRETREATMENTS

11:30 **Yihua Xia**, Kuichuan Sheng, Shaoping Qian  
STUDY ON THE TREATMENT OF TURTLE-BREEDING WASTE WATER WITH WATER HYACINTH

11:45 **Dave Anderson**, Alex Leshnick, Bill Charneski  
EVALUATION OF A COMMERCIAL SCALE ELECTROCHEMICAL OXIDATIVE SYSTEM: REMOVAL OF AMMONIA, NITRITE, AND NITRATE

12:00 **Sharon Nuñal**, Sheila Mae Santander-De Leon, Takeshi Yoshikawa, Hiroto Maeda  
ENHANCED BIOREMEDIATION OF HEAVY OIL-CONTAMINATED SEDIMENT BY COMBINED BIOSTIMULATION AND BIOAUGMENTATION STRATEGIES

**AMERICA'S TILAPIA ALLIANCE**

Wednesday, February 12 8:30 - 12:30 Room 613  
Chair: Mike Picchietti

8:30 **Willie Core**  
TILAPIA FEED COSTING QUALITY AND FUTURE ISSUES

9:00 **Carlos V. Martinez**  
THE FIZZY BOX, A HAND MADE, LOW TECH, EFFICIENT, AERATION DEVICE

9:30 **William Martin**  
LARGE SCALE RAS PRODUCTION IN USA, THE FUTURE OF FISH

10:00 **Gaston Dupree**  
LARGE SCALE FILLET PRODUCTION C. AMERICA FOR U.S. MARKET

10:30 **BREAK**

11:00 **Rob Ellis**  
U.S. RAS PRODUCTION: SMALLER PRODUCERS JOINED TO MARKET IN A COOP MODEL

11:30 **Dave Erdal**  
U.S. FISH AND WILDLIFE POINT MAN FOR THE INAD *Methyl testosterone* UPDATE ON MT FDA

12:00 **Israel Snir**  
TILAPIA'S ROLE IN THE GLOBAL PICTURE

12:30 **LUNCH**

1:30 **ATA ANNUAL MEETING**

## INGREDIENT EVALUATION

Wednesday, February 12 8:30 - 3:00 Room 602

Chair: Rick Barrows

- 8:30 John Bowzer**, Jesse Trushenski  
RESEARCH AND DEVELOPMENT OF ASIAN CARP-DERIVED FISH MEAL FOR AQUACULTURE FEEDS
- 8:45 Dave Jirsa**, Pete Nicklason, Michael Rust, Mark Drawbridge  
USE OF FISH PROCESSING TRIMMINGS TO REPLACE INDUSTRIAL FISH MEAL AND FISH OIL IN FEEDS FOR WHITE SEABASS *Atractoscion nobilis* AND CALIFORNIA YELLOWTAIL *Seriola lalandi*
- 9:00 Joy Campbell**, Ronald Hardy, Biswamitro Patro, Javier Polo, Joe Grenshaw  
PERFORMANCE OF RAINBOW TROUT FED DIETS SUPPLEMENTED WITH SPRAY-DRIED PLASMA
- 9:15 Misael Rosales**, Sergio Castillo, Camilo Pohlenz, Delbert Gatlin  
EVALUATION OF DISTILLERS YEAST AND FERMENTATION BIOMASS AS PARTIAL FISHMEAL REPLACEMENTS IN THE DIET OF RED DRUM *Sciaenops ocellatus*
- 9:30 Thomas O'Neill**, Jesse Peach, T. Gibson Gaylord, Frederic T. Barrows, Stephanie Block, Wendy M. Sealey  
REFINING INCLUSION LEVELS OF GRAIN DISTILLERS DRIED YEAST IN COMMERCIAL-TYPE AND PLANT-BASED DIETS FOR JUVENILE RAINBOW TROUT *Oncorhynchus mykiss*
- 9:45 Thomas Welker**, Chhorn Lim, Keshun Liu, Phillip Klesius  
EVALUATION OF DISTILLER'S DRIED GRAINS WITH SOLUBLES (DDGS) FROM DIFFERENT GRAIN SOURCES AS DIETARY PROTEIN FOR HYBRID TILAPIA *Oreochromis niloticus* × *O. aureus*
- 10:00 BREAK**
- 11:00 Ivy McClellan**, Addison Lee Lawrence, Jessica Morgan, Susmita Patnaik  
EVALUATION OF DIFFERING LEVELS OF CANOLA PROTEIN CONCENTRATE AS A POTENTIAL FISH MEAL REPLACEMENT IN *Litopenaeus vannamei* DIETS
- 11:15 Yangen Zhou**, Xiaoyun Fang, Katia Oliveira, Denghang Yu, Rebecca L. Cook, Melanie A. Rhodes, D. Allen. Davis  
GROWTH RESPONSE OF CORN PROTEIN CONCENTRATE IN PRACTICAL DIETS FOR PACIFIC WHITE SHRIMP *Litopenaeus vannamei*
- 11:30 Fabio Soller**, Eric Bell  
CORN PROTEIN CONCENTRATE IN AQUACULTURE DIETS
- 11:45 Dong-Fang Deng**, Zhi Yong Ju, Warren Dominy, Joannie Dobbs, Marcus Kenny, Peter Sherlock  
DUCKWEED *Lemna* spp. PROVIDES A POTENTIAL PROTEIN SOURCE FOR FEEDING PACIFIC WHITE SHRIMP *Litopenaeus vannamei*
- 12:00 Zachary Kupchinsky**, Leigh Anne Bright, Shawn Coyle, James Tidwell  
EVALUATION OF HETEROTROPHIC ALGAE MEAL AS A PROTEIN SOURCE IN CHANNEL CATFISH *Ictalurus punctatus* DIETS

- 12:15 Janice Ragaza**, Shunsuke Koshio, Roger Edward Mamauag, Manabu Ishikawa, Saichiro Yokoyama, Shiela Villamor  
DIETARY SUPPLEMENTAL EFFECTS OF RED SEAWEED *Eucheuma denticulatum* ON GROWTH PERFORMANCE, CARCASS COMPOSITION AND BLOOD CHEMISTRY OF JUVENILE JAPANESE FLOUNDER *Paralichthys olivaceus*
- 12:30 LUNCH**
- 1:30 Rebecca Cook**, D. Allen Davis, Katia Oliveira, Denghang Yu, Melanie A. Rhodes  
GROWTH PERFORMANCE OF FLORIDA POMPANO *Trachinotus carolinus* FED PRACTICAL DIETS WITH COTTON SEED FLOUR PROCESSED BY VARYING METHODS
- 1:45 Md Shah Alam**, Wade Watanabe, Austin Anderson, Patrick Carroll, Thomas Wedegaertner  
REPLACEMENT OF MENHADEN FISH MEAL PROTEIN BY GENETICALLY IMPROVED AND SOLVENT-EXTRACTED LOW GOSSYPOL COTTONSEED FLOUR IN THE DIET OF JUVENILE BLACK SEA BASS *Centropristis striata*
- 2:00 Frederic Barrows**, Jason Frost, Aaron Nistler, Mark Portman, Carly Stone, Nicolas Leonard  
DETERMINATION OF THE NUTRITIONAL AND ECONOMIC VALUE OF A PROTEIN CONCENTRATE MADE FROM NUT PROCESSING WASTE FOR RAINBOW TROUT *Oncorhynchus mykiss*
- 2:15 Erlinda S. Ganzon-Naret**  
GROWTH RESPONSES AND FEED INTAKE OF *Lates calcarifer* TO FOUR DIFFERENT DIETARY PROTEIN LEVELS WITH GREEN PEA *Pisum sativum* UNDER CONTROLLED LABORATORY CONDITION
- 2:30 Gavin Key**  
SOY PROTEIN CONCENTRATE AND BYPRODUCT-BASED ALTERNATIVE PROTEIN SOURCES FOR POST-FISHMEAL HIGH VALUE MARINE FINFISH CULTURE

## PHYSIOLOGY

Wednesday, February 12 8:30 - 3:00 Room 607

Chair: Ken Overturf

- 8:30 Konrad Dabrowski**, Timothy Parker, Karolina Kwasek, Michal Wojno  
THERMAL AND HYPOXIC THRESHOLDS FOR GROWTH OF CYPRINID FISHES – A REVIEW
- 8:45 Brian Shepherd**, Gregory J. Fischer, James A. Held, Christopher F. Hartleb, Kendall Holmes, Jeffrey A. Malison  
COMPARATIVE EFFECTS OF CONSTANT VERSUS FLUCTUATING THERMAL REGIMENS ON YELLOW PERCH GROWTH, FEED CONVERSION AND SURVIVAL
- 9:00 Nour Eissa**, Han-Ping Wang, Zhigang Shen, Hiam Elabd, Vikas Kumar, Paul O'Bryant, Dean Rapp, ElSayed Abou-ElGheit, Adel Shaheen  
TRANSCRIPTIONAL EXPRESSION OF HSP-70, IGF-I AND OXIDATIVE STRESS GENES IN RESPONSE TO HANDLING AT DIFFERENT WATER TEMPERATURES IN YELLOW PERCH



- 9:15 Zhigang Shen**, Hanping Wang, Hong Yao, Nour Eissa, Hiam Elabd, Vikas Kumar, Dean Rapp, Paul O'Bryant, Kunqian Zhu  
MOLECULAR CLONING AND EXPRESSION PROFILE OF THREE SEX-SPECIFIC GENES UNDER TWO REARING TEMPERATURES DURING SEX DIFFERENTIATION IN YELLOW PERCH
- 9:30 Zhigang Shen**, Hanping Wang, Hong Yao, Nour Eissa, Hiam Elabd, Vikas Kumar, Dean Rapp, Paul O'Bryant, Kunqian Zhu  
SEXUAL DIMORPHIC EXPRESSION OF GENES BEFORE AND DURING SEX DIFFERENTIATION UNDER THERMAL OR HORMONAL EFFECTS IN BLUEGILL
- 9:45 Heather Stewart**, Brian Peterson, Kurt Showmaker, Peter Allen  
COMPARATIVE TRANSCRIPTOMICS OF CHRONIC HIGH TEMPERATURE EFFECTS ON GEOGRAPHIC STRAINS OF CHANNEL *Ictalurus punctatus* AND HYBRID *I. punctatus* × *I. furcatus* CATFISHES
- 10:00 BREAK**
- 11:00 Jorge Fernandes**, Kazue Nagasawa, Carlo Lazado  
PHOTOPERIOD TREATMENT AND SEXUAL MATURATION ARE ASSOCIATED WITH DYNAMIC CHANGES IN THE FAST MUSCLE MICRORNA TRANSCRIPTOME IN ATLANTIC COD
- 11:15 Alyssa R. Freitag**, LeeAnne R. Thayer, Heather J. Hamlin  
SUBLETHAL EFFECTS OF ELEVATED NITRATE ON ATLANTIC SALMON *Salmo salar*
- 11:30 John Colt**, Eric Kroeger  
IMPACT OF AERATION AND ALKALINITY ON THE WATER QUALITY AND PRODUCT QUALITY OF TRANSPORTED TILAPIA
- 11:45 J. Alan Johnson**, Robert C. Summerfelt  
TANK DESIGN AND BUFFER TO REDUCE TRANSPORTATION STRESS OF WALLEYE *Sander vitreus*
- 12:00 Jesse Trushenski**, Kelli Barry  
LIVE TRANSPORTATION OF POND- VS. CAGE-REARED HYBRID STRIPED BASS
- 12:15 Jorge Fenucci**, María Marcoval, Ana Díaz, Susana Velurtas  
UV RADIATION EFFECT ON SURVIVAL AND GROWTH, AND QUANTIFICATION OF FREE-RADICALS IN POSTLARVAL STAGES OF THE RED SHRIMP *Pleoticus muelleri*

## CATFISH

Wednesday, February 12 8:30 - 4:30 Room 615

Chairs: Nagaraj Chatakondi, Jimmy Avery

- 8:30 Nagaraj G. Chatakondi**  
BREEDING STRATEGY OF U.S. FARM-RAISED CHANNEL CATFISH *Ictalurus punctatus* AFFECTS PROGENY PRODUCTION AND PERFORMANCE
- 8:45 Nagaraj G. Chatakondi**  
LOW TEMPERATURE EXPOSURE TO POST-VITELLOGENIC CHANNEL CATFISH *Ictalurus punctatus* EXTEND REPRODUCTIVE READINESS

- 9:00 Matthew S. Recsetar**  
2013 YIELD VERIFICATION RESULTS FROM 13 SPLIT POND PRODUCTION SYSTEMS IN ARKANSAS
- 9:15 Ganesh Kumar**, Carole Engle  
ECONOMIC AND INVESTMENT ANALYSES OF ALTERNATE CATFISH FARMING TECHNOLOGIES
- 9:30 Ganesh Kumar**, Carole Engle  
ADOPTION OF ALTERNATE PRODUCTION TECHNOLOGIES IN CATFISH INDUSTRY
- 9:45 Matthew S. Recsetar**  
PRODUCTION RESULTS FROM A 2-YEAR VERIFICATION PROGRAM OF CATFISH PONDS USING INTENSIVE AERATION (> 11.7\_kwh/ha; 6.4 hp/ac)
- 10:00 BREAK**
- 11:00 Lisa Bott**, Terrill R. Hanson, Luke A. Roy, Jesse A. Chappell  
PRODUCTION AND ECONOMICS OF HYBRID CATFISH *Ictalurus punctatus* × *Ictalurus furcatus* RAISED IN AN IN-POND RACEWAY SYSTEM IN WEST ALABAMA
- 11:15 Terrill Hanson**, Luke Roy, Lisa Bott, Gregory N. Whitis, Jesse A. Chappell  
ALABAMA YIELD VERIFICATION PROGRAM – CATFISH COST OF PRODUCTION
- 11:30 Lisa B. Bott**, Luke A. Roy, Terrill R. Hanson, Gregory N. Whitis, Jesse A. Chappell  
THE USE OF A YIELD VERIFICATION PROGRAM TO EVALUATE PRODUCTION METHODS ON A HYBRID CATFISH PRODUCTION OPERATION THAT USES INTENSIVE AERATION (10 HP/ACRE) IN WEST ALABAMA
- 11:45 Terrill R. Hanson**, Corey Courtwright  
REGRESSION MODELING OF PRODUCTION AND PROFITABILITY FOR THE WEST ALABAMA CATFISH INDUSTRY
- 12:00 Terrill R. Hanson**, Corey Courtwright  
A FARM MANAGEMENT APPROACH TO CONTROL YELLOW FILLET IN PROCESSED CATFISH
- 12:15 Terrill R. Hanson**, Corey Courtwright  
A FARM MANAGEMENT APPROACH TO CONTROL OFF-FLAVOR IN PROCESSED CATFISH
- 12:30 LUNCH**
- 1:30 Gregory Whitis**, Terry Hanson, Luke Roy, Jesse Chappell, Lisa Bott  
FIELD VALIDATION OF THE FISHY SOFTWARE PROGRAM FOR CATFISH PRODUCTION USING THREE YEARS OF PRODUCTION DATA FROM AN ALABAMA POND VERIFICATION TRIAL
- 1:45 William A. Wurts**  
CHANNEL CATFISH FOOD CONVERSION RATIOS, FEEDING RATES AND GROWTH
- 2:00 Forrest Wynne**  
SIZE SELECTIVE CHANNEL CATFISH *Ictalurus punctatus* HARVEST TO STOCK KENTUCKY FEE FISHING PONDS

- 2:15 Gregory Whitis**, Terry Hanson, Luke Roy, Jesse Chappell, Lisa Bott  
USING GRADED FINGERLINGS IN INTENSIVE COMMERCIAL CATFISH  
PRODUCTION: REALITY, MYTH, AND DOES IT REALLY MATTER?
- 2:30 Anita Kelly**, Nagaraj Chatakondi, Jeff Baxter  
THE EFFECT OF TRIPLOID INDUCTION ON PRODUCTION OF HYBRID CATFISH  
UNDER COMMERCIAL CONDITIONS

## ECONOMICS AND MARKETING

Wednesday, February 12 8:30 - 5:00 Room 606

Chair: Madan Dey

- 8:30 Miroslav Batka**, Siwa Msangi, Mimako Kobayashi, Stefania Vannuccini,  
Madan M. Dey, James L. Anderson  
FISH TO 2030: MODELING GLOBAL SEAFOOD MARKET
- 8:45 James L. Anderson**, Siwa Msangi, Mimako Kobayashi, Miroslav Batka,  
Stefania Vannuccini, Madan M. Dey  
FISH TO 2030: BASELINE PROJECTION
- 9:00 Madan M. Dey**, Siwa Msangi, Mimako Kobayashi, Miroslav Batka,  
Stefania Vannuccini, James L. Anderson  
FISH TO 2030: AQUACULTURE DISEASE SCENARIO
- 9:15 Frank Asche**, Atle Oglend  
THE STATISTICAL AND ECONOMIC RELATIONSHIP BETWEEN FISHMEAL AND  
SALMON PRICES
- 9:30 Gunnar Knapp**  
SALMON FARMING ECONOMICS
- 9:45 Jose Fernandez-Polanco**, Ana Horrillo, Ignacio Llorente  
MARKET DETERMINANTS OF THE FREQUENCY OF SEAFOOD PROMOTIONAL  
SALES AT SUPERMARKETS
- 10:00 BREAK**
- 11:00 Ganesh Kumar**, Carole Engle  
TECHNOLOGY ADOPTION IN AQUACULTURE: THE CURIOUS CASES OF SHRIMP,  
SALMON, AND TILAPIA FARMING
- 11:15 Carole Engle**, Kamina Johnson, Bruce Wagner  
COMPARATIVE ECONOMICS OF U.S. CATFISH PRODUCTION STRATEGIES:  
EVIDENCE FROM A CROSS-SECTIONAL SURVEY
- 11:30 Diego Valderrama**, Luz Adriana Velasco  
AN ECONOMIC MODEL FOR THE FARMING OF NATIVE SCALLOP SPECIES IN THE  
CARIBBEAN BASIN
- 11:45 Madan Dey**, Mark Rosegrant, Rowena Valmonte-Santos, Oai Li Chen, Kamal Gosh  
ANALYSIS OF ECONOMIC IMPACT OF ADAPTATION STRATEGIES FOR THE  
AQUACULTURE/FISHERIES SECTOR UNDER CLIMATE CHANGE: METHODOLOGY  
AND RESULTS FROM VANUATU AND TIMOR LESTE

- 12:00 Kamal Gosh**, Madan Dey, Oai Li Chen  
ANALYZING THE USE OF FISH FOR FOOD SECURITY IN FIJI AND SOLOMON ISLANDS: CLIMATE CHANGE PERSPECTIVES
- 12:15 Roy Endré Dahl**, Frank Asche, Sigbjorn Tveteraas  
VOLATILY REGIMES IN AQUACULTURE MARKETS: SPECIES AND PRODUCTS
- 12:30 LUNCH**
- 1:30 Mohammad Hasan**, Yoonsuk Lee, Madan Dey  
FORECASTING OF POND BANK PRICES OF U.S. FARM-RAISED CATFISH: EFFECT OF THE PRESENCE OF OUTLIERS
- 1:45 Cathy Roheim**, Hirotsugu Uchida, Robert Johnston, Seth Tuler  
LONG-RUN HEALTH RISKS AND PERCEPTIONS: IMPLICATIONS FOR WILLINGNESS TO PAY FOR SEAFOOD
- 2:00 Kristin Helen Roll**, Frank Asche, Atle G. Guttormsen, Ragnar Tveterås  
PRODUCTION GROWTH, INNOVATION AND ENVIRONMENTAL CHALLENGES – THE GROWTH OF NORWEGIAN SALMON FARMING
- 2:15 Robert Nelson**, Chao Wang  
BRAND EQUITY AMONG PRODUCERS OF CHINESE MITTEN CRAB *Eirocheir sinensis*
- 2:30 Cathy Roheim**, Sha Sha, Julie Insignares Santos, Frank Asche  
MEDIA COVERAGE OF PCB CONTAMINATION OF FARMED SALMON: THE RESPONSE OF U.S. IMPORT DEMAND
- 2:45 Jeffrey Peterson**  
THE VALUE OF CERTIFICATION
- 3:00 BREAK**
- 3:30 Dan Kauffman**, Martha Walker  
CONSUMER EVALUATIONS OF FRESHWATER PRAWNS *Machrobrachium rosenbergii* EATEN AT HOME AFTER PURCHASE AT A HIGH-END U.S. GROCERY
- 3:45 Richard Bryant**, Siddhartha Dasgupta, Angela Caporelli, Laura Tiu  
RESTAURANT PERCEPTIONS OF LOCALLY GROWN FRESHWATER SEAFOOD IN KENTUCKY AND OHIO
- 4:00 B. Tosan Fregene**, Tosin A. Fabowale  
CONSUMER PREFERENCE FOR CULTURED FISH IN OGUN STATE, NIGERIA
- 4:15 James Bukenya**, Maurice Ssebisubi, Joseph Molnar, Nelly Isyagi  
MARKET LINKAGES BETWEEN FARM-RAISED AND WILD-CAUGHT FISH IN UGANDA
- 4:30 Thomas Fletcher**  
DEVELOPING SEAFOOD INDUSTRIES: EXAMINING FACTORS AFFECTING MARICULTURE IN THE PACIFIC NORTHWEST

# ISSUES AFFECTING AQUATIC VETERINARY PROGRAMS & PRACTICE

Wednesday, February 12 8:30 - 5:00 Room 616

Chair: Dave Scarfe

- 10:30 Jiashuo Ma**, Robert Durborow, Catherine Frederick, Tiffany Ogunsanya, Andrew Redden, Khamisi Campbell, Walter Kahill  
DISEASE CASES EXAMINED AT THE KENTUCKY STATE UNIVERSITY FISH DISEASE DIAGNOSTIC LABORATORY FROM 2009 THROUGH 2013
- 10:45 Christopher Good**, Timothy Welch  
WEISSELLOSIS *Weissella* sp. IN NORTH CAROLINA: AN IMPORTANT EMERGING DISEASE IN USA FARMED RAINBOW TROUT *Oncorhynchus mykiss*
- 11:00 Myron J. Kebus**  
COMPARING FISH FARMERS TO POULTRY FARMERS WHEN IT COMES TO ANIMAL HEALTH
- 11:15 Myron J. Kebus**  
THE ECONOMICS OF FISH HEALTH FOR FISH FARMERS AND VETERINARIANS
- 11:30 David Scarfe**  
EDUCATIONAL AND TRAINING OPPORTUNITIES FOR THE PRACTICING AQUATIC VETERINARIAN
- 11:45 A. David Scarfe**, Myron Kebus  
MODEL CERTIFICATES OF VETERINARY INSPECTION USEFUL FOR ENSURING DISEASE-FREE MOVEMENT OF FISH
- 12:00 Joanne Constantine**  
CANADIAN AQUATIC ANIMAL HEALTH REGULATIONS
- 12:30 LUNCH**
- 1:30 Elizabeth Rumley**  
AQUACULTURE AND THE LACEY ACT
- 2:00 Jennifer Matysczak**  
FDA-CVM AQUATIC VETERINARY PROGRAMS, INITIATIVES & NEWS
- 2:30 Brett Koonse**  
FDA-CFSAN PROGRAMS, INITIATIVES AND REGULATIONS ASSURING SEAFOOD SAFETY
- 3:00 Lee Ann Thomas**  
USDA-APHIS-VS AQUATIC VETERINARY PROGRAMS, INITIATIVES AND REGULATIONS
- 3:30 BREAK**
- 3:45 Mark Mason**  
MODULE 13: AQUATIC ANIMAL HEALTH REGULATIONS AND HEALTH CERTIFICATION

WEDNESDAY

**4:15 Mark Mason**  
MODULE 15: DISEASE PREVENTION AND BIOSECURITY IN AQUACULTURE

**4:45 Mark Mason**  
NATIONAL VETERINARY ACCREDITATION PROGRAM MODULE # 14:  
AQUATIC ANIMAL DISEASES AND RELATED REGULATORY ACTIVITIES

## EXTENSION

Wednesday, February 12 11:00 - 12:30 Room 604  
Chair: Laura Tiu

WEDNESDAY

**11:00 Artur N. Rombenso, Viviana Lisboa, Luis A. Sampaio**  
PROMOTING MARICULTURE IN SOUTHEAST BRAZIL

**11:15 Brian L. Nerrie**  
VIRGINIA'S AQUACULTURE EXTENSION MODEL: MARKET DRIVEN

**11:30 Laura Tiu, Estefania James**  
AQUACULTURE BOOT CAMP: EVALUATION OF A NEW AND BEGINNING FARMER  
TRAINING PROGRAM

**11:45 Ganesh Kumar, Carole Engle**  
CRITICAL FACTORS ENHANCING TECHNOLOGY ADOPTION

**12:00 Noel Novelo, Terrence Tiersch**  
ULTRASONOGRAPHY – A GENERAL APPROACH TO INTEGRATING NEW  
TECHNOLOGY IN RESEARCH AND COMMERCIAL AQUACULTURE

**12:15 Tetsuzan Benny Ron**  
THE NEED FOR A MODERNIZED PROFESSIONAL DEVELOPMENT PROGRAM FOR  
AQUACULTURE EXTENSION AGENTS

## MARINE FISH CULTURE

Wednesday, February 12 1:30 - 3:00 Room 618  
Chair: Artur Rombenso

Sponsor: **NOVUS** 

**1:30 John Stieglitz, Daniel Benetti, Ronald Hoenig, Jorge Suarez, Carlos Tudela, Zack Daugherty**  
IMPROVEMENT OF METHODS FOR COMMERCIAL-SCALE HATCHERY  
PRODUCTION OF MAHI-MAHI *Coryphaena hippurus*

**1:45 Martin Perez-Velazquez, Mayra L. González-Félix, Perla Urquidez-Bejarano, Christian Minjarez-Osorio**  
EFFECTS OF SALINITY ON GROWTH, SURVIVAL, AND PLASMA OSMOLALITY OF  
JUVENILE GULF CORVINA *Cynoscion othonopterus*

**2:00 Erik Oberg, Cynthia Faulk, Lee Fuiman**  
OPTIMAL RATION FOR JUVENILE PIGFISH GROW-OUT

- 2:15** **Melanie Rhodes**, Rebecca Cook, Denghang Yu, Katia Oliveira, Guilherme Sassi, D. Allen Davis, Terry Hanson  
RESPONSE OF FLORIDA POMPANO TO INCREASING NUMBERS OF FEEDINGS
- 2:30** **Artur N. Rombenso**, Cauê B. Moreira, Fernanda B. Candiotto, Luis A. Sampaio, Mônica Y. Tsuzuki  
FEEDING FREQUENCY AFFECT GROWTH OF JUVENILE COBIA CULTURED IN NEAR-SHORE CAGES

## DISCUSSION OF POTENTIAL FOR A U.S. AQUACULTURE CHECKOFF PROGRAM

Wednesday, February 12 1:30 - 3:00 Room 607

Moderator: Dan Vogler

The U.S. Aquaculture industry is broadly challenged to communicate a positive message to the American public about the benefits of domestic aquaculture and the consumption of farm raised seafood. Development of a U.S. Aquaculture Checkoff Program could provide the resources necessary to widely convey a positive message and shift public opinion about U.S. Aquaculture and its products. Join in the developing discussion of the potential for U.S. Aquaculture to re-invest in itself.

## ALTERNATIVE FEEDS DEVELOPMENT

Wednesday, February 12 3:30 - 5:00 Room 602

Chair: Ian Forster

- 3:30** **Ian Forster**, Briony Campbell, Bruce Morton, Brad Hicks, Mahmoud Rowshandeli, Nahid Rowshandeli, Kassandra McFarlane, Kate McGivney  
OPTIMIZATION OF FISHMEAL, FISH OIL AND WHEAT IN DIETS FOR JUVENILE SABLEFISH *Anoplopoma fimbria* USING MIXTURE METHODOLOGY
- 3:45** **Gary Burr**, William Wolters, Frederic Barrows, Casey Grimm, Michael Dowd  
GROWTH EVALUATION OF ATLANTIC SALMON *Salmo salar* RAISED IN SEAWATER OR FRESHWATER AND FED EITHER FISHMEAL BASED OR MARINE-FREE DIETS
- 4:00** **Frederic Barrows**, Jason Frost, Steven Craig, Mark Portman, Clete DeShazer  
DETERMINATION OF THE THERMAL OPTIMA FOR GROWTH AND DEVELOPMENT OF ALTERNATIVE FISH-MEAL FREE DIETS FOR COHO SALMON *Oncorhynchus kisutch*
- 4:15** **Gibson Gaylord**, Wendy Sealey, Frederic Barrows, Gary Fornshell, Christopher Myrick, Carolyn Ross  
ALTERNATIVE PROTEIN DIETS FOR RAINBOW TROUT AND THE POTENTIAL TO REDUCE DIETARY CRUDE PROTEIN LEVELS
- 4:30** **Gary Fornshell**, Wendy M. Sealey, T. Gibson Gaylord, Frederic T. Barrows, Christopher A. Myrick, Carolyn Ross  
ALTERNATIVE PROTEIN DIETS FOR RAINBOW TROUT: PERFORMANCE ON A COMMERCIAL TROUT FARM
- 4:45** **Omolola Betiku**, Gibson Gaylord, Frederic Barrows, Chris Myrick, Carolyn Ross, Gary Fornshell, Wendy Sealey  
ALTERNATIVE PROTEIN DIETS FOR RAINBOW TROUT: PERFORMANCE IN A LABORATORY TRIAL

## AQUACULTURE WITHOUT FRONTIERS

Wednesday, February 12 1:30 - 5:00 Room 609

Chairs: Roy Palmer, Antonio Garza de Yta

- 1:30 Gleyn Bledsoe**, Barbara Rasco  
AQUACULTURE AS A SUCCESSFUL AND SUSTAINABLE INSTRUMENT FOR AFFECTING ECONOMIC RECOVERY AND DEVELOPMENT IN A POST WAR ENVIRONMENT
- 1:45 Joseph R. Sullivan**  
BOOTSTRAPPING AQUACULTURE FROM PRODUCTION TO MARKETING IN DEVELOPING NATIONS – A CASE EXAMPLE IN LIBERIA
- 2:00 Angela Caporelli**, Marty Riche  
ASSESSMENT AND RECOMMENDATIONS FOR TWO SITES WITH ACTIVE AND POTENTIAL AQUACULTURE PRODUCTION IN RIFT VALLEY AND COAST PROVINCES, KENYA
- 2:15 Antonio Garza de Yta**  
AwF IN MEXICO – LATEST DEVELOPMENTS
- 2:30 Scott Lindell**, Rick Karney  
NEW AQUACULTURE LEARNING CENTERS IN MEXICO; AwF AND FARMER-TO-FARMER REVIEW
- 2:45 Roy Palmer**  
AwF – LATEST DEVELOPMENTS

## AQUACULTURE AND THE ENVIRONMENT

Wednesday, February 12 1:30 - 5:00 Room 608

Chair: Lauren Jescovitch

- 1:30 Claude E. Boyd**  
ENERGY USE AND CARBON EMISSIONS IN AQUACULTURE
- 1:45 Lauren Jescovitch**, Claude E. Boyd  
WATER SURFACE:LAND AREA RATIO FOR AQUACULTURE PONDS
- 2:00 Larry L. Lawson**, Jeffrey E. Hill, Scott Hardin  
ASSESSMENT OF RISKS OF TRANSGENIC FLOURESCENT ORNAMENTAL FISHES TO THE UNITED STATES USING THE FISH INVASIVENESS SCORING KIT (FISK v2)
- 2:15 Hyun-Ki Hong**, Hee-Jung Lee, Hee-Do Jeung, Hyun-Sil Kang, Heung-Sik Park, Ok Hwan Yu, Won Joon Shim, Kwang-Sik Choi  
GROWTH AND REPRODUCTIVE CONDITION OF PACIFIC OYSTER *Crassostrea gigas* RAISED IN AN INTERTIDAL RACK-SUSPEDED CULTURE SYSTEM IN TAEAN OFF THE WEST COAST OF KOREA, 3 YEARS AFTER THE HEBEI SPIRIT OIL SPILL
- 2:30 M. Golam Mortuza**, Fahad A. Almisned  
INDUSTRIAL EFFLUENT AND MINICIPAL DISCHARGE EFFECT ON THE FUNNAL DIVERSITY IN WADI HANIFAH: A CASE STUDY
- 2:45 Mehdi Moslemi-Aqdam**, Javid Imanpour Namin, Masoud Sattari, Shahram Abdolmalaki, Ali Bani  
SEX RATIO, GONADOSOMATIC AND HEPATOSOMATIC INDICES OF PIKE *Esox lucius* (LINNAEUS, 1798) IN ANZALI LAGOON (SOUTHWEST OF THE CASPIAN SEA)



# GENERAL AQUACULTURE

Wednesday, February 12 1:30 - 5:00 Room 611

Chairs: Vaun Cummins, Keith Filer

Sponsor:  Altech®

- 1:30 Keith Filer**, Vaun Cummins  
FARMING THE SEA
- 1:45 Kurt A. Rosentrater**  
TECHNO-ECONOMIC ANALYSIS OF HARVESTING, PROCESSING, AND TRANSPORTING OF SEAWEED
- 2:00 Ceres A. Molina-Cárdenas**, M. del Pilar Sánchez-Saavedra, Alexei Licea-Navarro  
PROTOCOL TO DECREASE BACTERIAL CONTENT IN CULTURES OF *Isochrysis galbana*
- 2:15 Charles Malveaux**, Steven Hall  
ENVIRONMENTAL CONTROL SYSTEM FOR *Alligator mississippiensis* RESEARCH FACILITY
- 2:30 Jose Sanchez**  
ALGAE: A TRIPLE SOLUTION TO AQUACULTURE INDUSTRY CHALLENGES
- 3:00 BREAK**
- 3:30 Michelle L. “Mick” Walsh**, Elizabeth A. Fairchild  
OPTIMAL REARING STRATEGIES FOR WHITE WORMS *Enchytraeus albidus*: A LIVE FEED FOR JUVENILE AND SMALL-MOUTHED ORGANISMS
- 3:45 Larry L. Lawson**, Jeffrey E. Hill, Scott Hardin, Lorenzo Vilizzi, Gordon Copp  
APPLICATION AND PERFORMANCE OF THE FISH INVASIVENESS SCORING KIT (FISK v2) TO IDENTIFY THE INVASIVENESS RISK OF NON-NATIVE FRESHWATER FISHES IN PENINSULAR FLORIDA
- 4:00 Julie Delabbio**  
SUBMERSIBLE LED LIGHTING IN AQUACULTURE: THE ABILITY TO MANIPULATE LIGHT SPECTRUM, LIGHT INTENSITY AND PHOTOPERIOD IN ONE LIGHTING SYSTEM
- 4:15 Siyanbola Omitoyin**, Olabisi Fawehinmi, A. B. Pomary  
GENDER PARTICIPATION IN AQUACULTURE IN LAGOS STATE NIGERIA
- 4:30 Siyanbola Omitoyin**, Abiola Oyeleye  
REDUCTION TECHNOLOGY AND DISTRIBUTION BOTTLE NECKS OF CATFISH VALUE CHAIN IN OSUN STATE NIGERIA
- 4:45 Mohamed E. Megahed**  
GROWTH TRIALS ON WILD, DOMESTICATED AND HYBRIDS OF INDIAN WHITE SHRIMP *Fenneropenaeus indicus*

WEDNESDAY

# NOTES

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