

# Aquaculture America 2018



**TUESDAY, February 20**

## **PLENARY SESSION**

Tuesday, February 20 8:30 - 10:15 Concorde B

Chair: Dave Cline

**8:30 WELCOME**

**8:45 Jerry Schubel**  
THE AQUACULTURE STORY

**9:15 Dave Lieber**  
THE POWER OF PERFECT STORYTELLING TO PROMOTE THE AQUACULTURE MOVEMENT

**10:00 STUDENT SPOTLIGHT**

**Elizabeth M. Groover**, Tropical Aquaculture Laboratory, University of Florida  
GREENWATER CULTURE AND LAVAL DEVELOPMENT OF THE MELANURUS WRASSE *Halichoeres melanurus*

**Jyotsna Shrivastava**, Systemic Physiological and Ecotoxicological Research, University of Antwerp  
FINDING AN IDEAL FASTING PERIOD PRIOR TO THE LIVE FISH TRANSPORTATION: ASSESSMENT OF AMMONIA EXCRETION DYNAMICS AND AEROBIC METABOLISM TRADE-OFF

**John D. Grayson**, School of Environment and Natural Resources, The Ohio State University  
PARTIAL AND TOTAL REPLACEMENT OF FISH OIL WITH FATTY ACID ETHYL ESTERS IN THE STARTER DIETS OF RAINBOW TROUT *Oncorhynchus mykiss*

## TELLING YOUR STORY WORKSHOP

Tuesday, February 20 11:00 - 12:30 Versailles 3

TUESDAY

### 11:00 Dave Lieber

DAVE'S AQUACULTURE STORYTELLING WORKSHOP: PRACTICE WHAT WE TEACH

EVERY COMPANY HAS A STORY TO TELL Every day, stories of overcoming problems, helping customers, making improvements happen all around you. The best ones — that show 'universal truths' about your company — should be shared.

YOUR MARKETING — TO BE EFFECTIVE — SHOULD TELL A STORY We start with the facts we want to share, and our goals and motivation for telling the information. Then we construct a story around it.

## NUISANCE WILDLIFE

Tuesday, February 20 11:00 - 12:30 Champagne 1

Chair: Troy Bader

### 11:00 Brian S. Dorr

BIRD DEPREDATION RESEARCH AND MANAGEMENT ON AQUACULTURE: AN OVERVIEW

### 11:15 D. Tommy King

INTERACTIONS OF AMERICAN WHITE PELICANS AND AQUACULTURE IN THE SOUTHEASTERN UNITED STATES

### 11:30 Paul Burr, Jimmy Avery, Garrett Street, Bronson Strickland, Brian Dorr

MULTI-SCALE ABUNDANCE AND DISTRIBUTION TRENDS OF DOUBLE-CRESTED CORMORANTS *Phalacrocorax auritus* ON CATFISH AQUACULTURE IN MISSISSIPPI

### 11:45 Brian S. Dorr

DOUBLE-CRESTED CORMORANT PREDATION ON CATFISH AQUACULTURE

### 12:00 Fred Cunningham, Katie Hanson-Dorr, Lorelei Ford, Alex Crain, Lanna Durst,

Raleigh Middleton, Larry Hanson

POTENTIAL OF FISH EATING BIRDS TO SPREAD VIRULENT *Aeromonas hydrophila*

### 12:15 John McConnell, Kristina Godwin, Kimberly Wagner, Stephen Kendrot

STATUS OF THE AQUACULTURE AND PUBLIC RESOURCE DEPREDATION ORDERS TO ADDRESS RESOURCE DAMAGE ISSUES ASSOCIATED WITH CORMORANTS

## FINFISH DISEASE

Tuesday, February 20 11:00 - 12:30 Bordeaux

Chair: Roy Yanong

### 11:00 Jason Evenhuis

COMPARING TWO POPULATIONS OF RAINBOW TROUT AGAINST *Flavobacterium columnare*

### 11:15 Suja Aarattuthodiyil, Todd Byars, Matt Griffin, David Wise, Lester Khoo, Terry Greenway

FISH VACCINATION- FACTORS TO CONSIDER

- 11:30 Baba Usman Ibrahim**  
A SURVEY OF PROTOZOAN INFECTION OF SOME COMMERCIAL FISHES IN BIDA,  
NIGER STATE, NIGERIA
- 11:45 Erhowose Emmanuel Omovwohwovie**, Abiodun O. Adeyemo, Blessing C. Okogbue,  
Eguono S. Osaide, Preye Ofunama  
PARASITES OF *Oreochromis niloticus* OBSERVED IN THE FISHERIES UNIT OF THE  
NIGER DELTA UNIVERSITY TEACHING AND RESEARCH FARM

## POLICIES AND PERMITTING

Tuesday, February 20 11:00 - 12:30 Concorde A  
Chair: Kessina Lee

- 11:00 Jonathan van Senten**, Carole R. Engle  
THE EFFECTS OF REGULATIONS ON U.S. TROUT PRODUCERS: COSTS AND IMPACTS
- 11:15 Cedar Bouta**, James Morris  
SCIENCE LEADS THE WAY: MOVING WASHINGTON'S NET PEN GUIDANCE  
FORWARD IN A CULTURE OF CONCERN
- 11:30 Kessina Lee**  
MARINE SALMON NET PENS AND WATER QUALITY PERMITTING
- 11:45 Read Porter**, Brooke Hodge, Rebecca Kihslinger, Diane Murphy, Michael Tlusty  
MassCOAST: A NEW SHELLFISH AQUACULTURE SITING AND PERMITTING TOOL  
FOR MASSACHUSETTS
- 12:00 Diane Windham**, Janet Whaley  
SHELLFISH SANITATION PROTOCOL IN FEDERAL WATERS
- 12:15 Virginia C. Crothers**, Lisa C. Wickliffe, and James A. Morris, Jr.  
SHELLFISH AQUAMAPPERS: A NATIONAL ANALYSIS OF DATA, ARCHITECTURAL  
DESIGN, AND UTILITY

## AQUACULTURE WELFARE

Tuesday, February 20 11:00 - 12:30 Champagne 2  
Chair: Craig Watson

- 11:00 Paul Zajicek**  
2018 ANIMAL WELFARE ACTIVIST CAMPAIGN
- 11:15 Craig Watson**  
SITUATIONAL AWARENESS
- 11:30 Tim Kniffen**  
ONE APPROACH TO ANIMAL WELFARE IN THE DAIRY INDUSTRY: DAIRY CARE  
365® AND ITS APPLICATION TO AQUACULTURE
- 11:45 Hannah Thompson-Weeman**  
ANIMAL WELFARE: LESSONS LEARNED FROM ANIMAL AGRICULTURE
- 12:15 Q & A**

## ECOLOGY AND THE ENVIRONMENT

Tuesday, February 20 11:00 - 12:45 Versailles 2

Chair: Karuna Chintapenta

TUESDAY

- 11:00 Lauren N. Jescovitch**, Matthew Stone, Gulnihal Ozbay  
STABLE ISOTOPE ANALYSIS FOR DETERMINATION OF FEEDING HABITS OF BLUE CRAB *Callinectes sapidus* IN THE DELAWARE BAY
- 11:15 Gifty Anane-Taabeah**, Emmanuel A. Frimpong, Eric Hallerman  
THE POTENTIAL EFFECT OF AQUACULTURE ON THE GENETIC PURITY OF NATURAL POPULATIONS OF NILE TILAPIA *Oreochromis niloticus* IN GHANA
- 11:30 Jeremiah Minich**, Todd Michael, Julius Michael, Rob Knight  
DEVELOPMENT OF A MODEL MARINE FISH: HIGH THROUGHPUT GENOME AND MICROBIOME ANALYSIS OF PACIFIC CHUB MACKEREL *Scomber japonicus* ACROSS SEASONS AND BODY SITES
- 11:45 Richard Langton**, Thomas Noji, John Forster  
AN ECOSYSTEM APPROACH TO AQUACULTURE, IMPLICATIONS FOR THE TECHNOLOGY OF PRODUCTION, PROCESSING AND PRODUCT QUALITY
- 12:00 Gennady G. Matishov**, Elena N. Ponomareva  
MODERN BIOTECHNOLOGIES OF AQUACULTURE IN THE SOUTH OF RUSSIA
- 12:15 Baba Usman Ibrahim**  
SURVEY OF THE FISH FAUNA OF RIVER KUNKO, DABBAN, NIGER STATE, NIGERIA
- 12:30 Jenn-Kan Lu**, Rui-Hong Dai  
SMART AND PRECISE AQUACULTURE SYSTEM FOR INCREASING PRODUCTIVITY AND SUSTAINABLE PRODUCTION OF AQUACULTURE

## EXTENSION AND TECHNOLOGY TRANSFER

Tuesday, February 20 11:00 - 12:45 Loire

Chairs: Forrest Wynne, Kathryn Mitchell

- 11:00 Gary Fornshell**, Forrest Wynne  
ANALYSIS OF THE 2017 NATIONAL AQUACULTURE EXTENSION CONFERENCE
- 11:15 Forrest Wynne**  
AQUACULTURE EXTENSION SPECIALIST: MANAGING RESPONSIBILITIES AND EXPECTATIONS
- 11:30 Jimmy Avery**, Lester Khoo, Mark Peterman, Luke Roy, Larry Dorman  
HELPING THE U.S. FARM-RAISED CATFISH INDUSTRY AVOID RESIDUES IN PROCESSED PRODUCT
- 11:45 Gertrude Atukunda**, Andrew State, Joseph Molnar, Peter Atekyereza  
ACTOR PERSPECTIVES ON AQUACULTURE EXTENSION SERVICE PROVISION IN CENTRAL AND NORTHERN UGANDA
- 12:00 Tetsuzan Ron**  
DETERRING PISCIVOROUS BIRDS FROM AQUACULTURE OPERATIONS

- 12:15 Konstantinos Bovolis**, Kostas Seferis, Gerasimos Antzoulatos, Antonio Coli, Evagelia Sbiliri, Konstantinos Tzakris, Ioannis Despotopoulos  
DEVELOPMENT OF GROWTH MODELS FOR HATCHERY PRODUCTION USING DATA MINING AND MACHINE LEARNING METHODS
- 12:30 Gregory Whitis**, David Teichert-Coddington  
RESULT DEMONSTRATION: USING AN *IN SITU* BIOASSAY SYSTEM TO DETERMINE A WATER AMENDMENT APPLICATION RATE FOR IMPROVING SURVIVAL AND PRODUCTION ON AN INLAND SHRIMP FARM IN LOWNDES COUNTY, ALABAMA

## FINFISH HUSBANDRY

Tuesday, February 20 11:00 - 12:30 Chablis

Chair: Maria Célia Portella

- 11:00 Shahid Mahboob Rana**, Bilal Hussain, Tayyaba Sultana, Salma Sultana, Khalid Al-Ghanim, Khalid Al-Ghanim  
FISH ECO-GENOTOXICOLOGY: MICRONUCLEUS ASSAY IN FISH ERYTHROCYTES AS *IN SITU* BIOMARKER OF FRESHWATER POLLUTION
- 11:15 Jyotsna Shrivastava**, Amit Kumar Sinha, Sarah Cannaerts, Eline Verroste, Ronny Blust, Gudrun De Boeck  
FINDING AN IDEAL FASTING PERIOD PRIOR TO THE LIVE FISH TRANSPORTATION: ASSESSMENT OF AMMONIA EXCRETION DYNAMICS AND AEROBIC METABOLISM TRADE-OFF
- 11:30 John Walakira**, Cassias Aruho, Bridget Kimera, Euglance Ganda, Lydia Nakasiga, Joseph Molnar, Ben Readings, Russell Borski  
AFRICAN LUNGFISH *Protopterus aethiopicus* IN UGANDA: CAPTIVE BREEDING AND LARVAL REARING
- 11:45 James Barron**, Racheal Headley, Kelli Hawke, John Holmes, Ronald Twibell, Ann Gannam  
EFFECTS OF WATER TEMPERATURE ON GROWTH, SURVIVAL AND WHOLE BODY LIPIDS OF LARVAL PACIFIC LAMPREY *Entosphenus tridentatus*
- 12:00 Jyotsna Shrivastava**, Božidar Raškovic, Ronny Blust, Gudrun De Boeck  
GROWTH PROMOTING EFFECT OF SUSTAINED SWIMMING IN COMMON CARP *Cyprinus carpio*
- 12:15 Maria Célia Portella**, Flavio F. Ribeiro  
ONTOGENY AND MORPHOLOGY LIMITS OF INTRACOHORT CANNIBALISM DURING THE EARLY-LIFE STAGES OF DOURADO *Salminus brasiliensis*

# SHELLFISH LEASING AND PERMITTING: CASE STUDIES FOR OVERCOMING COMMON LEGAL BARRIERS

Tuesday, February 20 11:00 - 3:00 Champagne 3

Chair: Stephanie Otts

TUESDAY

- 11:00 Stephanie Otts**  
LEGAL CHALLENGES TO SHELLFISH AQUACULTURE OPERATIONS: LEASING, PERMITTING, AND ZONING, OH MY!
- 11:15 Catherine Janasie**, Amanda Nichols  
NATIONAL CASE STUDIES: CORPS NATIONWIDE PERMITS AND ENDANGERED SPECIES ACT
- 11:30 Read Porter**  
RHODE ISLAND CASE STUDIES: ACCESS TO PUBLIC BOAT LAUNCHES AND NURSERY UPWELLER SITES
- 12:00 James Lloyd**, Kelsey Thwaites, Angela King  
VIRGINIA CASE STUDIES: JOINT PERMITTING AND MANAGING USE CONFLICTS ON THE LYNNHAVEN RIVER
- 12:30 LUNCH**
- 1:30 Shana Jones**, Danielle Goshen  
GEORGIA CASE STUDY: THE CHALLENGE OF KEEPING LAWS AND POLICIES IN SYNC WITH ADVANCES IN OYSTER FARMING METHODS
- 1:45 Lisa Schiavinato**  
CALIFORNIA CASE STUDY: AQUACULTURE OFF THE CALIFORNIA COAST: BREAKING POLICY BARRIERS AND NEW GROUND AT THE FEDERAL AND STATE LEVELS
- 2:00 ROUNDTABLE DISCUSSION** ON CASE STUDIES AND LEGAL CHALLENGES

## ZEBRAFISH HUSBANDRY WORKSHOP

Tuesday, February 20 11:00 - 5:00 Concorde B

Chair: Bobbi Baur

- 11:00 Ana Catarina Certal**  
ZHA ANNUAL MEETING
- 12:30 LUNCH**
- 2:00 Mark Francis** INTRODUCTION
- Ana Catarina Certal** - ZHA UPDATE AND STEWARDSHIP AWARD  
**Katy Murray** - ZIRC UPDATE  
**Susan Farmer** - ZEBRAFISH HUSBANDRY TRAINING UPDATE  
**George Sanders** - WAVMA RACE VETERINARY CE

- 2:45 Carl Breaker**  
A LOW COST METHOD OF SKIN SWABBING FOR COLLECTION OF DNA SAMPLES FROM SMALL LABORATORY FISH
- 3:05 Dan Castranova**  
A BURGEONING NEW FISH MODEL: THE SCIENCE AND HUSBANDRY OF THE MEXICAN CAVEFISH *Astyanax mexicanus*
- 3:25 Ana Catarina Certal**  
DEVELOPMENT OF A NOVEL SPERM ULTRA-FAST FREEZING CRYOPRESERVATION PROCEDURE
- 3:45 Dante Michael D'India**  
THE LABORATORY ZEBRAFISH ENVIRONMENT IN 2017: COMMUNITY SURVEY RESULTS
- 4:05 Maurine Hobbs**  
FOOD CONVERSION RATIOS: A STRATEGY FOR FOOD SUBSTITUTIONS
- 4:25 Lauren Pandolfo**  
TIPPING THE SCALE IN OUR FAVOR: HOW BODY CONDITIONS SCORING, STANDARDIZED HEALTH ASSESSMENT, AND SENTINEL MONITORING CAN REDUCE DISEASE BURDEN IN A LARGE SCALE NON-SPF FACILITY

## FEED INGREDIENTS

Tuesday, February 20 11:00 - 5:00 Concorde C

Chair: Wendy Sealey

- 11:00 Raquel Pereira**, Maarten Jay van Schoonhoven, Maria Angeles Rodriguez  
OLMIX SURVEY 2016: THE NATURAL CO-OCCURRENCE OF MYCOTOXINS IN FEEDSTUFF
- 11:15 Claudia Figueiredo-Silva**, Karthik Masagounder, Don Sneddon  
PRECISION AA NUTRITION IS KEY FOR ECONOMIC AND SUSTAINABLE PRODUCTION OF HEALTHY FISH AND SHRIMP
- 11:30 Seunghan Lee**, Brian Small, Biswamitra Patro, Ronald Hardy  
COMPARATIVE LYSINE REQUIREMENT OF TWO STRAINS OF JUVENILE RAINBOW TROUT *Oncorhynchus mykiss*
- 11:45 Ryan Mass**, Charles Gallop, Chris Gerken, Jeremy Javers, Jesse Spooner, Brandon Emme, HW Harris, Steve Craig, Kurt Dieker  
ASSESSMENT OF NEW YEAST PRODUCTS AS FEED FOR RAINBOW TROUT *Oncorhynchus mykiss*
- 12:00 Stephanie S. Block**, John C. Bowser, John F. Less  
THE USE OF PROPLEX DY IN AQUACULTURE DIETS, AN OVERVIEW OF EXISTING LITERATURE
- 12:15 Alexandra Amorocho**, Elkin R. Montecino, D. Allen Davis  
TILAPIA GROWTH PERFORMANCE USING CORN PROTEIN WITH YEAST
- 12:30 Michele Jones**, Rebecca Lochmann  
MODIFIED SOYBEAN MEALS AS SUSTAINABLE PROTEIN SOURCES IN DIETS OF LARGEMOUTH BASS (*Micropterus salmoides*)

**12:45 LUNCH**

- 1:30 Marina Subramaniam**, Lynn P. Weber, Alyssa B. Kilgour, George W. Forsyth, Murray D. Drew, Matthew E. Loewen  
DIFFERENCES IN GASTROINTESTINAL GLUCOSE TRANSPORTERS BETWEEN CARNIVOROUS RAINBOW TROUT *Oncorhynchus mykiss* AND OMNIVOROUS NILE TILAPIA *Oreochromis niloticus* IN RESPONSE TO PULSE CROPS
- 1:45 Kabir Chowdhury**, Shi Ze, Xiaoqin Li, Xiaoqin Zhang, Jianan Chen, Xiangjun Leng  
ORGANIC ACID SALTS, A PROTEASE COMPLEX AND THEIR COMBINATION AFFECT PERFORMANCE OF COMMON CARP *Cyprinus carpio* FED MEAT-BONE MEAL BASED DIETS
- 2:00 Alexandra Amorocho**, Elkin R. Montecino, D. Allen Davis  
TILAPIA GROWTH PERFORMANCE USING PROTEASES AND CARBOHYDRASES
- 2:15 Amir Bitan**, Nathan Gur  
BLACK SOLDIER FLY MEAL AS A PROTEIN SOURCE IN GILTHEAD SEABREAM FEED-OPPORTUNITY AND LIMITATIONS
- 2:30 Catherine Pujol-Baxley**  
A UNIQUE PROTEIN PLATFORM TECHNOLOGY TO MEET THE NEEDS OF AQUACULTURE
- 2:45 John Bowzer**, John Less, Stephanie Block  
AN OVERVIEW OF PROPLEX T IN AQUAFEEDS: A HIGH-QUALITY PROTEIN SOURCE FROM DRIED FERMENTATION BIOMASS
- 3:00 James Schwartz**, Vikas Kumar, Waldemar Rossi Jr., Katerina Kousoulaki, Grete Baevefjord  
ASSESSING THE NUTRITIONAL VALUE OF NOVEL SOYBEAN PRODUCTS IN THE DIET OF ATLANTIC SALMON *Salmo salar* L.
- 3:15 Gagan Kolimadu**, Waldemar Rossi Jr., Vikas Kumar, H-Michael Habte-Tsion  
ASSESSING THE NUTRITIONAL VALUE OF NOVEL SOYBEAN MEALS IN THE DIET OF LARGEMOUTH BASS *Micropterus salmoides*
- 3:30 Vikas Kumar**, Richard Hulefeld, Ramanathan S. Lalgudi, Barry McGraw  
NON-GENETICALLY MODIFIED, IMPROVED SOYBEAN MEAL (EnzoMeal™): POTENTIAL PROTEIN SOURCE FOR FISH AND SHRIMP
- 3:45 Dominic Odedeyi**, Joseph Olupona  
HAEMATOLOGY AND SERUM BIOCHEMISTRY OF *Clarias gariepinus* FED DIFFERENT LEVELS OF RAW AND STEAM-HEATED *Moringa oleifera* LEAF MEAL DIETS
- 4:00 Olufemi Soyinka**  
GROWTH PERFORMANCE AND PROXIMATE COMPOSITION OF *Clarias gariepinus* REARED ON MEAL USING CHICKEN EGG SHELL AS REPLACEMENT FOR DICALCIUM PHOSPHATE
- 4:15 Guillaume Salze**, Shima M. Salem, D. Allen Davis, Donna Snellgrove  
EFFECT OF DIETARY LIPID SOURCE ON DIGESTIBILITY AND HEALTH PARAMETERS IN CICHLIDS



- 4:30 R.S.N. Janjua**, Fayyaz Rasool, Sehar Munawar, Tajammul Rasheed  
GROWTH PERFORMANCE OF GIFT INFLUENCED BY VARYING CP LEVEL  
SOY-BASED EXTRUDED FEED AND LIMNOLOGICAL PARAMETERS
- 4:45 Md Ashraful Islam**, Nusrat Jahan, Khandaker Anisul Huq, Shahroz Mahean Haque,  
Md. Abdul Wahab, Hillary Egna, Russell Borski  
RESPONSE OF TOMATO *Solanum lycopersicum* GROWTH AND YIELD WITH  
INTEGRATION OF FISH POND MUDS AND MANAGEMENT PRACTICES
- 5:00 Sehar Munawar**, Noor Khan, Farkhanda Manzoor, Ghazal Jabeen, R.S.N. Janjua  
NUTRITIONAL EVALUATION OF PROCESSED SOYBEAN MEAL IN DIETS OF  
GENETICALLY MALE TILAPIA (GMT)

## BIOFLOC

Tuesday, February 20 1:30 - 4:30 Versailles 3

Chair: Susan Laramore



- 1:30 Chika Ikele**, Ujunwa Aghaji, Mgbenka Bernard  
EVALUATION OF DIFFERENT CARBON SOURCES IN THE BIOFLOC PRODUCTION,  
NUTRITIONAL COMPOSITION AND RELEVANT MICROORGANISM IN PLASTIC  
TANKS
- 1:45 Misael Rosales**, Jonathan Holt, Michael Hume, Charles Hernandez, Delbert Gatlin,  
Addison Lawrence  
EFFECT OF DIETARY PREBIOTICS ON BIOFLOC BACTERIAL PROFILE AND PACIFIC  
WHITE SHRIMP *Litopenaeus vannamei* PRODUCTION AND HEALTH
- 2:00 Susan Laramore**, Tzachi Samocha, Jutta Kesselring  
EFFECTS OF FEED PROBIOTIC LEVELS ADMINISTERED TO SHRIMP IN A BIOFLOC,  
NO EXCHANGE TANK SYSTEM
- 2:15 Leo J. Fleckenstein**, Andrew J. Ray, Nathan A. Kring  
THE EFFECTS OF VERTICAL SUBSTRATE AND SHRIMP *Litopenaeus vannamei*  
DENSITY ON WATER QUALITY AND PRODUCTION DYNAMICS IN INTENSIVE  
GREENHOUSE-BASED BIOFLOC SYSTEMS
- 2:30 Thomas Tierney**, Andrew Ray  
THE EFFECTS OF DENSITY AND ARTIFICIAL SUBSTRATE ON INTENSIVE SHRIMP  
*Litopenaeus vannamei* NURSERY PRODUCTION
- 2:45 Dariano Krummenauer**, Wellica Gomes, Luis H. Poersch, Paulo Cesar Abreu,  
Wilson Wasielesky Jr.  
THE CULTURE OF THE PACIFIC WHITE SHRIMP *Litopenaeus vannamei* WITH  
LIGHT RESTRICTION REARED IN BFT SYSTEMS
- 3:00 Leo Fleckenstein**, Andrew Ray  
EFFECTS OF SUPPLEMENTAL LED LIGHTING ON WATER QUALITY AND  
PACIFIC WHITE SHRIMP *Litopenaeus vannamei* PERFORMANCE IN A  
CHEMOAUTOTROPHIC-BASED HYBRID SYSTEM

- 3:15 Wilson Wasielesky**, Hellyjúnyor Brandão, Dariano Krummenauer, Íris Xavier, Gabriel Santana, Henrique Santana  
HETEROTROPHIC VS. MIXED BIOFLOC SYSTEMS: IMPACTS ON USE OF WATER, SUSPENDED SOLIDS PRODUCTION AND ZOOTECNICAL PERFORMANCE OF *Litopenaeus vannamei*
- 3:30 Timothy Morris**, Samantha Spence  
EMPLOYING PRACTICAL METHODS OF MEASURING SOLIDS IN BIOFLOC DOMINATED SHRIMP PRODUCTION RACEWAYS IN A COMMERCIAL APPLICATION
- 3:45 Nathan Kring**, Andrew Ray  
POLYCULTURE OF PACIFIC WHITE SHRIMP *Litopenaeus vannamei* AND JUVENILE TILAPIA *Oreochromis niloticus* IN INDOOR BIOFLOC AQUACULTURE SYSTEMS
- 4:00 Candis Ray**, Bartholomew Green, Steven Rawles, Matthew McEntire, Miles Lange, Bradley Farmer  
PRODUCTION OF STOCKER-SIZE HYBRID TILAPIA IN AN OUTDOOR BIOFLOC PRODUCTION SYSTEM
- 4:15 Nicholas Romano**, Akeem Dauda, Ikhsan Natrah, Murni Karim, Mohd Kamarudin  
FERMENTING RICE BRAN AS A CARBON SOURCE FOR BIOFLOC TECHNOLOGY SYSTEMS IMPROVED WATER QUALITY AND AFRICAN CATFISH *Clarias gariepinus* JUVENILE PRODUCTION

## IMMUNOLOGY AND STRESS

Tuesday, February 20 1:30 - 5:00 Champagne 1

Chair: Chris Green

- 1:30 Fernando Yamamoto**, Sergio Castillo, Delbert M. Gatlin III  
IMMUNOMODULATORY EFFECTS OF LINEAR  $\beta$ -1,3-GLUCAN PARAMYLON AND BRANCHED  $\beta$ -1,3/1,6-GLUCAN ZYMOZAN AS FEED ADDITIVES AND AS ADJUVANTS FOR HYBRID STRIPED BASS *Morone chrysops*  $\times$  *M. saxatilis*
- 1:45 Oscar Galagarza**, David Kuhn, Stephen Smith, Mary Mainous  
PRODUCTION OF ANTIBODY SELECTED FOR DETECTION OF PLASMA IMMUNOGLOBULINS IN STRIPED CATFISH *Pangasius hypophthalmus*
- 2:00 Grace Ramena**, Randolph Elble  
CLCA IS A METALLOPROTEASE INDUCED DURING PATHOGENESIS AND IS A POTENTIAL THERAPEUTIC MOLECULE TO DEAL WITH PISCINE DISEASE
- 2:15 Paula Miranda**, Alex Romero  
EFFECT OF NATCONTROL™ ON IMMUNITY MARKERS GENE EXPRESSION AND THE PROTECTION AGAINST *IN VITRO* INFECTION WITH *P. salmonis*
- 2:30 Adem Yavuz Sönmez**, Soner Bilen, Kerem Alagöz, Keriman Yürüten Özdemir, Khalifa Mofteh Abd El Ali  
IMMUNOSTIMULANT AND DIGESTIVE ENZYME ACTIVITY OF POMEGRANATE PEEL *Punica granatum* AQUEOUS METHANOLIC EXTRACT IN RAINBOW TROUT FINGERLINGS *Oncorhynchus mykiss*

- 2:45 Soner Bilen**, Nuri Mohamed Elderwish, Halil Ibrahim Özçelik, Rahmi Can Özdemir, Adem Yavuz Sönmez  
IMMUNOSTIMULANT AND DIGESTIVE ENZYME ACTIVITY OF VERATRUM  
*Veratrum album* IN RAINBOW TROUT *Oncorhynchus mykiss*
- 3:00 Bolade Adeyemo**, Gabriel Shola Solomon, Lateef Oloredo Tiamiyu, Clement Beneme Alawa, O.A. Ikongbeh, David Imgbian, Sarah Musa  
EFFECTS OF DIETARY ISOFLAVONE-GENISTEIN ON THE HAEMATOLOGY AND IMMUNOLOGICAL RESPONSES IN JUVENILE *Heterobranchus longifilis* CATFISH CHALLENGED WITH *Cytophaga columnaris*
- 3:15 Bolade Adeyemo**, Clement Alawa, Shola Solomon, David Imgbian  
EFFECTS OF DIETARY TURMERIC *Curcuma longa* ON GROWTH PERFORMANCE AND NON-SPECIFIC IMMUNE RESPONSES IN THE CLARIID CATFISH *Heterobranchus longifilis*

## AQUACULTURE 101

Tuesday, February 20 1:30 - 5:00 Bordeaux

Chair: Kathleen Hartman

- 1:30 Elizabeth Groover**  
CRASH COURSE IN CLOWNFISH CULTURE
- 1:45 Amy Stone**  
CHLORINE DIOXIDE
- 2:00 Matthew Smith**  
SYSTEM AND SPECIES OVERVIEW: A DIVERSIFIED COUNTRY
- 2:30 Forrest Wynne**  
POND CONSTRUCTION 101
- 3:00 Dave Conley**  
AquAdvantage SALMON'S JOURNEY TO MARKET: A STORY OF COURAGE AND PERSEVERANCE
- 3:30 Stephen Reichley**  
PRACTICAL APPROACHES TO HERD HEALTH IN AQUACULTURE
- 4:00 Neil Sims**  
OFFSHORE AQUACULTURE: QUIXOTIC CAREER CHOICE, OR SALVATION FOR THE SEAS
- 4:30 Kevin Snekvik**  
AQUACULTURE LABORATORY ACCREDITATION: WHY IT'S A PRIORITY FOR RELIABLE TESTING TO SUPPORT INTERSTATE AND INTERNATIONAL TRADE

# INTERAGENCY WORKING GROUP ON AQUACULTURE (IWGA) - PUBLIC MEETING

Tuesday, February 20 1:30 - 5:00 Concorde A

Chair: Gene Kim

TUESDAY

The Interagency Working on Aquaculture (IWGA), previously known as the Joint Subcommittee on Aquaculture, is hosting a public meeting at the Aquaculture America 2018 Conference venue. This public meeting provides an opportunity for the IWGA to discuss ongoing and planned activities in support of aquaculture development in the United States with stakeholders. In turn, this meeting provides an opportunity for the stakeholders to discuss issues of relevance to the IWGA members in attendance.

The IWGA was created by the National Aquaculture Act of 1980 and is chaired by the Department of Agriculture with vice-chairs from the Department of Commerce and Department of the Interior. The IWGA reports to the Committee on Science of the National Science and Technology Council. The IWGA addresses issues of national scope and importance and may form national task forces or special projects to facilitate a coordinated, systematic approach to addressing critical issues and needs. The purpose of the coordinating group is to increase the overall effectiveness and productivity of Federal aquaculture research, transfer, and assistance programs. In fulfilling this purpose, the coordinating group:

1. Reviews the national needs for aquaculture research, technology transfer and technology assistance programs;
2. Undertakes planning, coordination, and communication among Federal agencies engaged in the science, engineering, and technology of aquaculture;
3. Collect, compiles, and disseminates information on aquaculture;
4. Encourages joint programs among Federal agencies in areas of mutual interest relating to aquaculture; and
5. Recommends specific actions on issues, problems, plans, and programs in aquaculture.

Note: We are not requesting information as part of ongoing regulatory process. Although this will be a discussion of stakeholder issues of concern, it is not formal public input on regulations, as the IWGA is not a regulatory body. More information is available at <http://www.ars.usda.gov/iwga>.

## 1:30 Gene Kim

The Interagency Working on Aquaculture (IWGA), previously known as the Joint Subcommittee on Aquaculture, is hosting a public meeting at the Aquaculture America 2018 Conference venue. This public meeting provides an opportunity for the IWGA to discuss ongoing and planned activities in support of aquaculture development in the United States with stakeholders. In turn, this meeting provides an opportunity for the stakeholders to discuss issues of relevance to the IWGA members in attendance.

## WOMEN IN AQUACULTURE

Tuesday, February 20 1:30 - 5:00 Burgundy

Chair: Kathleen Hartman

- 1:30 Morgan Chow**, Hillary Egna, Jevin West  
WHICH AUTHOR IS WHICH? GENDER AUTHORSHIP POSITION AS A PROXY FOR THE STATUS OF GENDER IN AQUACULTURE LITERATURE
- 2:00 Amy Stone**  
EVOLUTION OF A CAREER; FROM HATCHERY MANAGER TO BUSINESS OWNER
- 2:30 Nicole Rhody**  
MOLDING A CAREER IN AQUACULTURE: PERSPECTIVES ON THE IMPORTANCE OF PROFESSIONAL ROLE MODELS AND MENTORSHIP IN SCIENCE TODAY
- 3:00 Grace Karramen**  
AQUACULTURE THROUGH THE RETROSPECTOSCOPE
- 3:30 Jessica Fox**  
FINDING YOUR FINNS! TRAINING OPPORTUNITIES IN AQUATIC ANIMAL MEDICINE
- 4:00 Lauren N. Jescovitch**  
CHALLENGES OF THE NOW GENERATION
- 4:30 Nanan Kouamé Félix Kouadio**, Narcisse Aboya, Kouassi Aimé Yao  
WOMEN AND THE DEVELOPMENT OF AGRICULTURAL ACTIVITIES IN IVORY COAST: THE CASE OF AQUACULTURE

TUESDAY

## PONDS

Tuesday, February 20 1:30 - 5:00 Loire

Chair: Matt Smith

- 1:30 Brittany Chesser**, Christopher Green, Peter J. Allen  
GROWTH COMPARISON OF TWO COHORTS OF GULF KILLIFISH *Fundulus grandis* IN FRESHWATER PONDS AND SALINITY TOLERANCE POST- POND CULTURE
- 1:45 Amit Sinha**, William R Green, Yathish Ramena, John Howe  
SELECTIVE SUPPRESSION OF ALGAL BLOOM IN AQUACULTURE PONDS WITH SODIUM CARBONATE PEROXYHYDRATE
- 2:00 Shikder S. Islam**, Al-Amin Hossain, Khandaker Anisul Huq, Wasim Sabbir, Shahroz Mahean Haque, Russell Borski  
IMPACT OF FERTILIZER ON PRODUCTION OF PRAWN, CARP, AND MOLA IN TRADITIONAL GHER FARMING SYSTEMS OF POOR RURAL FARMERS IN SOUTHWEST BANGLADESH
- 2:15 Sultan Mahmud**, Seikh Razibul Islam, Md. Emranul Ahsan, Niels O.G. Jørgensen, Muhammad Abdur Razzak, Md. Yusuf Ali  
EFFECTS OF WATER PARAMETERS ON PHYTOPLANKTON ABUNDANCE IN PANGASIUS *Pangasianodon hypophthalmus* AND TILAPIA *Oreochromis niloticus* PRODUCTION
- 2:30 Renalda Munubi**, Peter Masumbuko, Nazael Madalla, Sebastian Chenyambuga  
EFFECTS OF POND WATER REPLACEMENT AND STOCKING DENSITY ON WATER QUALITY, PLANKTON ABUNDANCE AND GROWTH PERFORMANCE OF TILAPIA *Oreochromis niloticus*

- 2:45 Md Ashrafal Islam**, Nusrat Jahan, Khandaker Anisul Huq, Shahroz Mahean Haque, Md. Abdul Wahab, Md. Abdul Wahab, Russell Borski, Hillary Egna  
INTEGRATING AGRICULTURE WITH AQUACULTURE: ROLE OF FISH SPECIES AND POND MUDS ON GROWTH, YIELD, AND NUTRITIONAL QUALITY OF SNAKE GOURD AND INDIAN SPINACH
- 3:00 Leticia Emiliani Fantini**, Jesse Chappell, Terry Hanson, Fernando Kubitza  
CHANNEL CATFISH *Ictalurus punctatus* PRODUCTION IN FLOATING RACEWAYS
- 3:15 Steven Hall**, Daniel Smith  
NOVEL AQUACULTURAL APPLICATIONS FOR INDIVIDUAL AND FLEETS OF AUTONOMOUS SURFACE VEHICLES

## CRUSTACEAN GENETICS

Tuesday, February 20 1:30 - 5:00 Versailles 2

Chair: Dustin Moss

- 1:30 Alejandra Villarreal-Garcia**, Humberto Villarreal, Pedro Cruz, José Naranjo, Mayra Vargas, José A. Hernández, Graciela Mora  
PRODUCTION PERFORMANCE OF *Cherax quadricarinatus* FAMILIES FROM A NUCLEUS WITH INCREASED GENETIC VARIABILITY IN MEXICO
- 1:45 Richard Towner**  
SELECTION TO IMPROVE DISEASE RESISTANCE IN SHRIMP
- 2:00 Thomas Gitterle**, Tanatchaporn Utairungsee, Chotitit Luengchaichawange, Daniel Fegan  
GENETIC (CO)VARIANCES IN ACUTE HEPATOPANCREATIC NECROSIS DISEASE (AHPND) RESISTANCE, HARVEST WEIGHT AND SURVIVAL IN *Penaeus vannamei*
- 2:15 Jeffrey Prochaska**, Supawadee Poopuang, Uthairat Na-Nakorn, Skorn Koonawootrittriron, Hein van der Steen  
EVALUATION OF GENETIC PARAMETERS AND DEVELOPMENT OF AN OPTIMAL, COMMERCIALY-VIABLE SPF BREEDING STRATEGY FOR *Litopenaeus vannamei*
- 2:30 Shaun M. Moss**  
TRIUMPHS, TRIALS, AND TRIBULATIONS OF SPF SHRIMP BROODSTOCK IN ASIA
- 2:45 John Buchanan**, America Fujimoto, Tiago Hori, Melissa Allen, Jason Stannard  
DEVELOPMENT OF A SNP MARKER PANEL FOR PARENTAGE, DIVERSITY AND RELATEDNESS ANALYSES IN PACIFIC WHITE SHRIMP *Penaeus vannamei*

## ECONOMICS OF FISH HEALTH

Tuesday, February 20 1:30 - 5:00 Chablis

Chair: Suja Aarattuthodiyil

- 1:30 Frank Asche**, James Anderson  
THE DYNAMICS OF DISEASE IN AQUACULTURE FROM AN ECONOMIC PERSPECTIVE
- 1:45 Patricia S. Gaunt**, Ganesh Karunakaran  
BENEFITS VS. COSTS OF ANTIBIOTIC MEDICATED FEED USE VS. WITHHOLDING FEED DURING BACTERIAL OUTBREAKS IN POND-REARED WARMWATER FISH

- 2:00 Roy Yanong**  
BIOSECURITY IN AQUACULTURE
- 2:15 Gregory Wiens**, Timothy Leeds  
SELECTIVE BREEDING FOR ENHANCED SPECIFIC DISEASE RESISTANCE:  
PRACTICAL CONSIDERATIONS AND POTENTIAL APPLICATIONS
- 2:30 Brian S. Dorr**  
ECONOMICS OF WILDLIFE CONTROL AND PERMITTING TO LIMIT DAMAGE TO  
AQUACULTURE
- 2:45 Kathleen Hartman**  
APPROACH FOR DEVELOPING COMMERCIAL AQUACULTURE HEALTH PROGRAM  
STANDARDS (CAHPS)
- 3:00 Brian Nerrie**  
*Macrobrachium rosenbergii* AND THE AQUARIUM MARKET
- 3:15 Jonathan van Senten**, Carole R. Engle, Kathleen Hartman, Kamina K. Johnson,  
Lori L. Gustafson  
IMPROVED PROFITABILITY THROUGH BETTER ANIMAL HEALTH? POTENTIAL  
IMPACTS OF A UNIFORM CODE FOR COMMERCIAL AQUATIC ANIMAL HEALTH
- 3:30 Jonas K. Torrissen**, Ragnar Tveterås  
CONSUMER PERCEPTION ON SEAFOOD: QUALITY EXPECTATIONS RELATED TO  
CHILLED/THAWED PRODUCTS

## FOOD SAFETY AND QUALITY

Tuesday, February 20 3:30 - 5:00 Champagne 3  
Chair: Balunkeswar Nayak

- 3:30 Lathadevi Chintapenta**, Amanda Abbott, Salina Parveen, Gulnihal Ozbay  
ASSESSMENT OF TOTAL AND PATHOGENIC VIBRIOS IN OYSTERS USING COPP  
ASSAY AND MOLECULAR METHODS
- 3:45 Razieh Farzad**, Sean F. O'Keefe, Andrew Neilson, Nicholas Ralston, David D. Kuhn  
ELEMENTAL COMPOSITION OF TILAPIA, SALMON, AND CATFISH IN UNITES  
STATES OF AMERICA MARKET: HEALTH AND NUTRITIONAL ASSESMENT AND  
HEALTH BENEFIT VALUE OF SELENIUM (HBVse)
- 4:00 Bunthang Touch**, Wilma Hurtada  
EFFECT OF CONSUMPTION OF COMPLIMENTARY TRADITIONAL FOOD ON THE  
GROWTH AND IRON STATUS OF 6 TO 15 MONTHS OLD CAMBODIAN CHILDREN  
IN PREVENG PROVINCE, CAMBODIA

# WEDNESDAY, February 21

## DEPARTMENT HOMELAND SECURITY - CHEMICAL FACILITY ANTI-TERRORISM STANDARDS (CFATS) OVERVIEW

Wednesday, February 21 8:30 - 10:00 Loire

Chairs: Jessica Falcon, Sylvia Del Valle, Josiah J. Hortege

WEDNESDAY

- 8:30** **Jessica Falcon**, Sylvia Del Valle, Josiah J. Hortege  
CFATS Program Overview · Why Chemical Facility Security? · CFATS Regulation – Appendix A
- 8:45** **Sylvia Del Valle**, Josiah J. Hortege, Jessica Falcon  
CFATS Process · Tiering Methodology · Various Industries regulated · National impact – current state
- 9:15** **Josiah J. Hortege**, Jessica Falcon, Sylvia Del Valle  
How to submit · Live Chemical Security Assessment Tool (CSAT) 2.0 Demonstration
- 9:30** **Q & A**

## BASS AND PERCH

Wednesday, February 21 8:30 - 12:30 Champagne 3

Chair: Ben Reading

- 8:30** **Brian Small**, Adam Bean  
INSULIN-LIKE GROWTH FACTORS AS MARKERS FOR GROWTH RATE IN U.S. LARGEMOUTH BASS POPULATIONS USED FOR FOODFISH PRODUCTION
- 8:45** **Ashley Tabibian**, Grant Blank, Dennis McIntosh  
GROWTH AND SURVIVAL OF LARGEMOUTH BASS WHEN FED DIETS CONTAINING BLACK SOLDIER FLY LARVAE
- 9:00** **Nathan Egnew**, Amit Sinha  
COMPENSATORY RESPONSES OF LARGEMOUTH BASS *Micropterus salmoides* TO CHRONIC HIGH ENVIRONMENTAL AMMONIA EXPOSURE
- 9:15** **Kenneth Semmens**, Boris Gomelsky  
EVALUATION OF THREE INDUCING AGENTS FOR ARTIFICIAL PROPAGATION OF LARGEMOUTH BASS *Micropterus salmoides*
- 9:30** **Sarah Rajab**, Andrew McGinty, Michael Hopper, Harry Daniels, Benjamin Reading  
REDUCED FREQUENCY FEEDING REGIMES IN SUNSHINE HYBRID STRIPED BASS (FEMALE *Morone chrysops* × MALE *M. saxatilis*)
- 9:45** **Benjamin Reading**, Robert Clark, Andrew McGinty, Michael Hopper, Scott Salger, Linnea Andersen, Linas Kenter, David Berlinsky  
METHODS OF DOMESTIC STRIPED BASS *Morone saxatilis* SPAWNING THAT DO NOT REQUIRE THE USE OF ANY HORMONAL INDUCTION PROCEDURES



- 10:30 Mackenzie Miller**, Thomas Delomas, Konrad Dabrowski  
EVALUATION OF SEXUAL MATURATION AND REPRODUCTIVE ABILITY OF  
TRIPLOID YELLOW PERCH *Perca flavescens* AND VIABILITY OF PROGENY
- 10:45 Gregory Fischer**  
PRODUCTION OF WALLEYE *Sander vitreus* AND HYBRID WALLEYE *S. vitreus* ×  
*S. canadense* WITH FORMULATED FEED UTILIZING VARIOUS REARING SYSTEMS  
AND NOVEL TECHNOLOGIES FOR COMMERCIAL FOOD FISH PRODUCTION

## MARINE FISH

Wednesday, February 21 8:30 - 12:30 Versailles 2

Chair: Todd Sink



WEDNESDAY

- 8:30 Todd Sink**, Elizabeth Silvy  
DEVELOPMENT OF EXTENSIVE LARVAL CULTURE AND GROW-OUT PROTOCOLS  
FOR COBIA *Rachycentron canadum* TO SUPPORT COMMERCIAL PRODUCTION  
ALONG THE GULF COAST
- 8:45 Helen Meigs**, Neil Sims, Dale Sarver, Lisa Vollbrecht  
HERBIVOROUS MARINE FINFISH CULTURE – THE COMPELLING CASE FOR  
KYPHOSIDS
- 9:00 Wade Watanabe**, Patrick M. Carroll, Md. Shah Alam, Christopher F. Dumas  
RECENT PROGRESS ON HATCHERY PRODUCTION OF BLACK SEA BASS  
JUVENILES TO SUPPORT FINFISH MARICULTURE GROWOUT INDUSTRY  
DEVELOPMENT IN THE EASTERN U.S.
- 9:15 Patrick Carroll**, Wade Watanabe, Md. Shah Alam, Paul Dimling  
THE EFFECTS OF STOCKING DENSITY ON GROWTH, SURVIVAL, AND RESISTANCE  
TO ACUTE CROWDING OF POST-METAMORPHIC STAGE BLACK SEA BASS  
*Centropristis striata* IN A PILOT COMMERCIAL SCALE NURSERY
- 9:30 Lisa C. Armbruster**, J. Adam Luckenbach, William T. Fairgrieve, Madison S. Powell,  
Ronald B. Johnson, Walton W. Dickhoff, Gordon K. Murdoch  
REGULATION OF MUSCLE GROWTH IN SABLEFISH *Anoplopoma fimbria* DURING  
GROW OUT
- 9:45 Elizabeth Silvy**, Todd Sink  
PRODUCTION OF GREATER QUANTITIES OF FEMALE SOUTHERN FLOUNDER FOR  
FOODFISH CULTURE AND STOCK ENHANCEMENT
- 10:00 BREAK**
- 10:30 Jamie Honeycutt**, Courtney A. Deck, Erika B. Atkins, Madeline E. Severance,  
Harry V. Daniels, John Godwin, James A. Rice, Russell J. Borski  
EFFECTS OF HABITAT AND FLUCTUATING TEMPERATURES ON SOUTHERN  
FLOUNDER SEX RATIOS
- 10:45 John Stieglitz**, Ronald Hoenig, Martin Grosell, Daniel Benetti  
NUTRITIONAL PHYSIOLOGY OF MAHI-MAHI *Coryphaena hippurus* AND THE  
IMPACTS OF FEEDING ON SWIM PERFORMANCE

- 11:00 Benjamin Lovewell**, Andrew Rhyne, Joseph Szczebak, Bradford Bourque, Robert Jacobson  
LARVAL SMALLMOUTH GRUNT *Haemulon chrysargyreum* FEED SURVIVORSHIP AND GROWTH RATE ON DIFFERENT COPEPODS *Apocyclops panamensis* AND *Parvocalanus* spp.
- 11:15 Veena Soni**  
GREEN FEED IN THE MARINE FISH FARMING
- 11:30 Matthew A. DiMaggio**, Jennifer Johns, Charles M. Adams, Jon-Michael L.A. Degidio, Eric J. Cassiano  
PRELIMINARY COST PROJECTIONS FOR PRODUCTION OF THE CALANOID COPEPOD *Parvocalanus crassirostris*
- 11:45 Matt Hawkyard**, Mark Drawbridge, Ben Laurel, Kevin Stuart, Chris Langdon  
RECENT PROGRESS IN THE USE OF LIPOSOMES FOR THE DELIVERY OF LOW MOLECULAR WEIGHT WATER-SOLUBLE (LMWS) NUTRIENTS TO AQUATIC ORGANISMS

## ADVANCED AQUACULTURE NUTRITION

Wednesday, February 21 8:30 - 12:30 Concorde C

Chair: Aaron Watson

- 8:30 Justin Yost**, Aaron M. Watson, Jason Frost, Michael P. Napolitano, John A. Bowden, Tracey Schock, Michael R. Denson  
PERFORMANCE OF SOY PROTEIN AND SOY OIL UTILIZED IN FEEDS FOR JUVENILE RED DRUM *Sciaenops ocellatus*
- 8:45 Aaron Watson**, Michael Napolitano, John Bowden, Tracey Schock, Justin Yost, Jason Frost, Michael Denson  
LIPIDOMICS DERIVED TISSUE PROFILES OF JUVENILE RED DRUM *Sciaenops ocellatus* FED SOY PROTEIN AND SOY OIL BASED FEEDS
- 9:00 Romi Novriadi**, Melanie Rhodes, Anneleen Swanepoel, João Reis, Carter Ullman, D. Allen Davis  
EFFECTS OF REPLACING ANIMAL MEAL WITH DIFFERENT ADVANCED SOY PRODUCT AND CORN PROTEIN CONCENTRATE ON THE GROWTH AND DISTAL INTESTINE HISTOLOGY OF FLORIDA POMPAÑO *Trachinotus carolinus*
- 9:15 John Grayson**, Konrad Dabrowski  
PARTIAL AND TOTAL REPLACEMENT OF FISH OIL WITH FATTY ACID ETHYL ESTERS IN THE STARTER DIETS OF RAINBOW TROUT *Oncorhynchus mykiss*
- 9:30 Gary Burr**, William Wolters, Fredric Barrows, Chong Lee  
GROWTH OF ATLANTIC SALMON *Salmo salar* FED SQUID AND SCALLOP PROCESSING BYPRODUCT HYDROLYSATES INCORPORATED INTO SOY PROTEIN CONCENTRATE (SPC)-DIETS
- 9:45 Ronald B. Johnson**, Peter M. Nicklason, Lisa C. Armbruster, Frank C. Sommers, Junghoon Jee, David Marancik, Brad A. Gadberry, John E. Colt  
ADDITION OF A RED MACROALGAE TO ALTERNATIVE PLANT BASED FEEDS FOR JUVENILE SABLEFISH *Anoplopoma fimbria*

**10:00 BREAK**

- 10:30 Cheyenne Owens**, Madison Powell, T. Gibson Gaylord, Wendy Sealey  
GROWTH, IMMUNE RESPONSE, AND DISEASE RESISTANCE OF JUVENILE RAINBOW TROUT FED DIETS CONTAINING CRICKET MEAL, AND MEALWORM MEAL
- 10:45 Mary Larkin**, Mary E.M. Larkin, Allen R. Place  
GLUTEN-FREE FISH: DIET AND INFLAMMATION IN EUROPEAN SEA BASS *Dicentrarchus labrax*
- 11:00 Matthew Cook**, Jonathan Lee, Ronald Johnson, Frederick Goetz  
GROWTH, DEFORMITIES AND SURVIVAL OF SABLEFISH LARVAE *Anoplopoma fimbria* FED TAURINE-ENRICHED ROTIFERS
- 11:15 John Grayson**, Richard Bruno, Konrad Dabrowski  
COMPARING THE ENRICHMENT OF LIVE FEEDS WITH  $\alpha$ -TOCOPHEROL OR A MIXED TOCOPHEROL PRODUCT AND THEIR EFFECTS ON THE PERFORMANCE OF YELLOW PERCH *Perca flavescens* LARVAE
- 11:30 Fabio Casu**, Daniel Bearden, Aaron Watson, Justin Yost, John Lefler, Gibson Gaylord, Rick Barrows, Paul Sandifer, Michael Denson  
NMR-BASED METABOLOMICS IDENTIFICATION OF A POTENTIAL METABOLIC BIOMARKER OF NUTRITIONAL STRESS IN RED DRUM *Sciaenops ocellatus* FED GRADED LEVELS OF SOYBEAN MEAL
- 11:45 Vikas Kumar**, Qingchao Wang, Madison S. Powell, Kenneth E. Overturf, Kangsen Mai, Ronald W. Hardy  
EXPRESSION PROFILE OF ENERGY METABOLISM AND NUTRIENT TRANSPORT REGULATING GENES IN RAINBOW TROUT IN RESPONSE TO FASTING-REFEEDING AND POSTPRANDIAL SAMPLING TIME
- 12:00 Dong-Fang Deng**, Seunghyung Lee, Song Yang, Shaowei Zhai, Silas Hung, Brian Shepherd, Fred Binkowski  
ENHANCEMENT OF LAKE STURGEON *Acipenser fulvescens* CONSERVATION THROUGH MANAGEMENT OF FORMULATED FEED
- 12:15 Guillaume Salze**, Lay Nguyen, D. Allen Davis, Shima M.R. Salem, Hieu Dinh  
TRYPTOPHAN REQUIREMENT IN SEMI-PURIFIED DIETS OF JUVENILE NILE TILAPIA *Oreochromis niloticus*

## FINFISH REPRODUCTION

Wednesday, February 21 8:30 - 12:30 Bordeaux

Chair: Nicole Rhody

- 8:30 Shafaq Fatima**, Mark Adams, Ryan Wilkinson  
THE EFFECT OF PHOTOPERIOD MANIPULATION UPON MATURATION AND SEX STEROIDS PROFILES OF BROOK TROUT *Salvelinus fontinalis*
- 8:45 Racheal Headley**, Ronald Twibell, Kari Dammerman, Justin Bohling  
EVALUATION OF EGG BIOCHEMICAL COMPOSITION AS A PREDICTOR OF SPAWNING SUCCESS IN COHO SALMON *Oncorhynchus kisutch*
- 9:00 Yue Liu**, Henrique Cheng, Terrence Tiersch  
ALKALINIZATION MEDIATED  $Ca^{2+}$  INFLUX ACTIVATES SPERM MOTILITY FROM LIVE-BEARING FISH

- 9:15 Ken Webb**, Lee Fuiman  
TAG-BASED RNA-Seq AS A TOOL TO EXAMINE GENE EXPRESSION DIFFERENCES IN RED DRUM *Sciaenops ocellatus* EGGS THAT DO AND DO NOT DEMONSTRATE METABOLIC PROGRAMMING
- 9:30 Jason Lemus**, Kerry Mesner  
CONTINUOUS SUPPLY OF ROTIFERS AT LOW CONCENTRATIONS FOR LARVAL CULTURE OF RED DRUM *Sciaenops ocellatus*
- 9:45 Matthew Resley**, Nicole Rhody, Roy Yanong, Kevan Main  
BROODSTOCK COLLECTION AND CAPTIVE SPAWNING PROTOCOLS FOR ALMACO JACK *Seriola rivoliana*
- 10:00 BREAK**
- 10:30 Wilfrido Contreras-Sanchez**, Juan Manuel Vidal-López, Arlette Hernández-Franyutti, María de Jesús Contreras-García, María del Carmen Uribe-Aranzábal  
FEMINIZATION OF PROTANDROUS HERMAPHRODITES *Centropomus poeyi* INTO FUNCTIONAL FEMALES USING 17 $\beta$ -ESTRADIOL
- 10:45 Gregory Weber**, Timothy Leeds  
SEX REVERSAL OF RAINBOW TROUT BY IMMERSION OF FRY IN 17-ALPHA METHYLTESTOSTERONE
- 11:00 Van Bao Duy Le**, Phuoc N. Nguyen, Kristof Dierckens, Dung V. Nguyen, Nico Boon, Tim Lacoere, Frederiek-Maarten Kerckhof, Jo De Vrieze, Peter Bossier  
LC-PUFAS AND GUT MICROBIAL COMMUNITY OF WILD AND HATCHERY RABBIT FISH *Siganus guttatus* LARVAE
- 11:15 Ahmed Md. Salem**, Nagy El-Bermawi, Nader Abdelsalam, Mohamed Abokadah  
EGYPT COMPARATIVE EUROPEAN SEABASS WILD COLLECTED, NIOF MARINE HATCHERY AND GAFRD K21 MARINE HATCHERY PRODUCED FRY GROWTH AND PHYSIOLOGY

## FINFISH GENETICS

Wednesday, February 21 8:30 - 12:30 Burgundy

Chair: Konrad Dabrowski

- 8:30 Eric Saillant**, Nour Salam, Kenneth Jones  
GENOMIC RESOURCES FOR THE SPOTTED SEATROUT *Cynoscion nebulosus*
- 8:45 André Garcia**, Brain Bosworth, Geoffrey Waldbieser, Shogo Tsuruta, Ignacy Misztal, Daniela Lourenco  
USING GENOMIC INFORMATION TO OPTIMIZE GENETIC IMPROVEMENT IN CHANNEL CATFISH
- 9:00 Lisa Vollbrecht**, Neil A. Sims, Jason Stannard, Tiago Hori, Helen Meigs  
TOFU-TOLERANT MARICULTURE: GENOMICS-ASSISTED BREEDING OF A HIGH QUALITY MARINE FINFISH FOR ENHANCED PERFORMANCE ON SUSTAINABLE, SCALABLE, SOY-BASED FEEDS

- 9:15 Hirofumi Ohga**, Koki Shibata, Satoshi Kai, Ryo Sakanoue, Hajime Kitano, Kohei Ohta, Naoki Nagano, Keishi Sakaguchi, Satoru Kuhara, Kosuke Tashiro, Sangwan Kim, Tetsushi Sakuma, Takashi Yamamoto, Koichiro Gen, Atsushi Fujiwara, Yukinori Kazeto, Takanori Kobayashi, Michiya Matsuyama  
FO FOUNDER PRODUCTION OF AVTR-V1A2 KNOCKOUT STRAIN IN CHUB MACKEREL USING GENOME EDITING TECHNIQUE
- 9:30 N.C.N. Perera**, Hanchang Son, G.I. Godahewa, Jehee Lee  
INTERFERON INDUCED PROTEIN-35 kDa NEGATIVELY REGULATES RIG-I CASCADE GENES IN ROCK BREAM
- 9:45 Amit Sinha**, Gaurav Zinta, Ajay Anand Kumar, Gerrit T.S. Beemster, Ronny Blust, Gudrun De Boeck  
GLOBAL TRANSCRIPTOME PROFILING OF MARINE FISH IN RESPONSE TO ENVIRONMENTAL CHANGE: SALINITY AND AMMONIA INTERACTIONS
- 10:00 BREAK**
- 10:30 Guyu Qin**, Zhenkui Qin, Zhi Ye, Ahmed Elasad, Max Bangs, Ramjie Odin, Khoi Vo, Nathan Backenstose, Yulin Jin, Huitong Shi, Rex Dunham  
GENE EDITING OF REPRODUCTIVE HORMONES TO STERILIZE CHANNEL CATFISH *Ictalurus punctatus*
- 10:45 Alexander Kramer**, Boris Gomelsky, Jeffrey Warner, Noel Novelo  
REPRODUCTIVE ABILITY OF TRIPLOID KOI × GOLDFISH HYBRID FEMALES AND RESULTS OF THEIR CROSSES WITH GOLDFISH AND KOI MALES
- 11:00 Noel D. Novelo**, Boris Gomelsky, Shawn D. Coyle, Jeffrey L. Warner, Alexander G. Kramer  
SEX AND COLOR SEGREGATION IN NILE TILAPIA CROSSES OBTAINED FROM DIFFERENT STRAINS OF YY MALES AND NORMAL XX FEMALES
- 11:15 Konrad Dabrowski**, Thomas Delomas  
REPRODUCTION, DEVELOPMENT, AND GROWTH OF CICHLID HYBRIDS (*Cichlasoma synspilum*, *C. urophthalmus*, AND *Amphilophus citrinellum*) – TO CONTINUE
- 11:30 Thomas Delomas**, Konrad Dabrowski  
MATERNAL EFFECTS ON UNIFORMITY OF GROWTH IN A HYBRID FINFISH
- 11:45 Frank Sommers**, David Baldwin, Ronald Johnson  
USE OF ELECTROPHYSIOLOGICAL TECHNIQUES IN EVALUATING EFFECT OF TAURINE DEFICIENT DIET ON OLFACTORY FUNCTION IN SABLEFISH *Anoplopoma fimbria*
- 12:00 Brian Peterson**, Gary Burr, Mike Pietrak  
UPDATE TO THE ATLANTIC SALMON BREEDING PROGRAM AT THE NATIONAL COLD WATER MARINE AQUACULTURE CENTER

## AQUACULTURE ECONOMICS AND MARKETING

Wednesday, February 21 8:30 - 4:00 Chablis

Chairs: Frank Asche, James Anderson

Sponsor: IAAEM

WEDNESDAY

- 8:30 James Anderson**, Frank Asche, Taryn Garlock  
AQUACULTURE GROWTH: WHERE, WHEN AND SOME THOUGHTS ON WHY
- 8:45 Ursula Landazuri**, Frank Asche, Sigbjorn Tveteraas  
GLOBALIZATION OF SEAFOOD MARKETS – ANALYZING MARKET INTEGRATION BY DEVIATIONS FROM COMMON PRICES
- 9:00 Sunila Rai**, Kamala Adhikari, Dilip K. Jha, Ram B. Mandal  
SUPPLY CHAIN ANALYSIS OF CARP IN TERAI, NEPAL
- 9:15 Hans-Martin Straume**, Frank Asche, Erling Vårdal  
TRADE MARGINS FOR NORWEGIAN SEAFOOD EXPORTS
- 9:30 Siddhartha Dasgupta**, Dakota Raab, Richard Bryant, Changzheng Wang, Quinton Phelps  
ECONOMIC FEASIBILITY IN PRODUCTION AND MARKETING OF BONELESS BIGHEAD AND SILVER CARP MEAT AT A SMALL SCALE
- 9:45 Vilde S. Amundsen**, Jennifer L. Bailey  
CERTIFICATION AND THE SIMPLISTIC INTERPRETATION OF SUSTAINABILITY
- 10:00 BREAK**
- 10:30 Navy Hap**, Minh Truong Hoang, Robert Pomeroy  
IMPACTS OF CLIMATE CHANGE ON SNAKEHEAD FISH VALUE CHAINS IN THE LOWER MEKONG BASIN OF CAMBODIA AND VIETNAM
- 10:45 Ivar Gaasland**, Hans-Martin Straume, Erling Vårdal  
IMPACTS OF TRADE COSTS ON NORWEGIAN EXPORT OF FARMED SALMON
- 11:00 Safina Namatovu**, Yuan Yongming, Andrew Suakuani, Shi Pei, Yuan Yuan  
PROFITABILITY ANALYSIS AND TECHNICAL EFFICIENCY ESTIMATION OF TILAPIA PRODUCTION IN CHINA
- 11:15 Robert Davis**, Claude Boyd, Aaron McNevin, Ravibabu Godumala, AvaniGadda Mohan  
RESOURCE USE AND EFFICIENCY IN BLACK TIGER SHRIMP *Penaeus monodon* PRODUCTION IN INDIA
- 11:30 Jinghua Xie**, Frank Asche  
TECHNICAL EFFICIENCY OF CHINA AQUACULTURE: THE CASE OF LARGE YELLOW CROAKER FARMING
- 11:45 Fabian Rocha Aponte**, Sigbjørn Tveteraas  
ON THE DRIVERS OF COST CHANGES IN THE NORWEGIAN SALMON AQUACULTURE SECTOR: A DECOMPOSITION OF A FLEXIBLE COST FUNCTION FROM 2001 TO 2014

- 12:00 Atle Guttormsen**, Kristin Roll, Md. Akhtarul Alam  
PRODUCTION RISK AND TECHNICAL EFFICIENCY OF TILAPIA AQUACULTURE FARMING IN BANGLADESH
- 12:15 James Bukenya**, Kelvin Lule, Moureen Matuha, Joseph Molnar, Theodora Hyuha  
FORECASTING FARM-GATE CATFISH PRICES IN UGANDA USING SARIMA MODEL
- 12:30 LUNCH**
- 1:30 Dengjun Zhang**, Marius Sikveland, Ragnar Tveterås  
DOES PUBLIC OWNERSHIP OF EQUITY AFFECT PROFITABILITY? THE CASE OF SALMON INDUSTRY
- 1:45 Benedict Posadas**, Mark Peterman  
MEASURING THE ECONOMIC IMPACTS OF AQUATIC ANIMAL DISEASES: THE CASE OF CATFISH FARMING
- 2:00 Elizabeth Fairchild**, Kelly Cullen, Curt Grimm, Tracy Keirns, Andrew Smith  
IMPACT OF NRAC AQUACULTURE FUNDING IN THE U.S. NORTHEAST
- 2:15 Ole Bergesen**  
INNOVATIVE CAPABILITIES AND CHOICES IN THE NORWEGIAN AQUACULTURE VALUE CHAIN
- 2:30 Richard Bryant**, Siddhartha Dasgupta  
HOLDING AND SALES OF LIVE CATIFSH: AN ECONOMIC OPPORTUNITY
- 2:45 Roberto Flores**, Kwamena Quagraine, Hye-Ji Kim, Verena McClain  
ECONOMIC ANALYSIS OF EXPERIMENTAL AQUAPONICS AND HYDROPONICS PRODUCTION IN THE U.S. MIDWEST
- 3:00 Kamal Gosh**, Terry Hanson, Rex Dunham, Nagaraj Chatakondi, David Drescher, Dalton Robinson, William Bugg, Carl Jeffers, Jesse Chappell, Fernando Kubitza, Ganesh Kumar  
ECONOMIC IMPACT OF CHANNEL-BLUE HYBRID CATFISH GROWTH VARIABILITY ON PRODUCTION
- 3:15 Theodora Hyuha**, Zech Halasi, Joseph Molnar, Kalumba Sloans, Egnar Hillary  
A COMPARATIVE ANALYSIS OF FISH TRADE IN UGANDA: GENDER PERSPECTIVE
- 3:30 Roy Endré Dahl**, Frank Asche, Muhammad Yahya  
VOLATILITY DYNAMICS IN AQUACULTURE FISH MARKETS
- 3:45 Zech Gidongo Halasi**, Theodora Hyuha, Joseph Molnar, William Ekere, Gabriel Elepu, Peter Walekwa, Chimatiro Sloans Kalumba, Hillary Egna  
ESTIMATING DEMAND FOR FISH AND ITS PRODUCTS IN UGANDA

## AQUAPONICS

Wednesday, February 21 8:30 - 4:00 Versailles 3

Chairs: Janelle Hager, Allen Patillo

WEDNESDAY

- 8:30 Allen Patillo**, Paul Barrett, Kristin Callahan, Francesca Laursen, Thad Jackson  
INCREASING ACCESS TO CLIMATE-SMART AGRICULTURE: AQUAPONICS IN JAMAICA
- 8:45 R. Charlie Shultz**  
UPDATE ON AQUAPONIC FOOD PRODUCTION AND WORKFORCE TRAINING AT SANTA FE COMMUNITY COLLEGE
- 9:00 George B. Brooks Jr.**  
CAN AQUAPONICS HELP RESTORE THE UNITED STATES AQUACULTURE INDUSTRY
- 9:15 Ryan Chatterson**  
AQUAPONIC TECHNOLOGY AS A CATALYST TO BRING SUSTAINABLE SALMON PRODUCTION OUT OF THE NET PEN AND INTO LAND BASED RAS FACILITIES
- 9:30 Matthew Recsetar**, Kevin Fitzsimmons  
DEVELOPMENT OF EXPERIMENTAL AQUAPONICS UNITS IN MYANMAR (BURMA)
- 9:45 Mohammed Qahwaji**  
THE STATUS OF AQUAPONICS IN GCC COUNTRIES AND THE SOCIAL, ENVIRONMENT, AND ECONOMICAL IMPACT OF AQUAPONICS IN SAUDI ARABIA
- 10:00 BREAK**
- 10:30 Sophia K. Rotole**, D. Allen Patillo  
MINI-AQUAPONICS: ENGINEERING A MORE SUSTAINABLE WORLD THROUGH EDUCATION AND IMPLEMENTATION
- 10:45 George B. Brooks Jr.**  
CONVERTING BACKYARD SPLASH POOLS TO AFFORDABLE AQUAPONIC MINI-FARMS
- 11:00 Alexander Sitek**, Anna DeVitto, Todd Guerdat  
RETHINKING RAS: DEVELOPING NUTRIENT BALANCE WITHIN RECIRCULATING AQUAPONIC SYSTEMS
- 11:15 Mollie Smith**, Daniel Wells, Terrill Hanson, Jesse Chappell, David Blersch  
WATER AND NUTRIENT MANAGEMENT AND SAVINGS IN CLOSED-LOOP AQUAPONIC TILAPIA/VEGETABLE PRODUCTION
- 11:30 Hany Almotairy**, Kevin Fitzsimmons, Jean McLain  
ACCUMULATION OF HEAVY METALS IN AN AQUAPONICS SYSTEM AND EFFECT ON ANTIBIOTIC RESISTANCE OF BACTERIA
- 11:45 Michele Jay-Russell**, Elizabeth Antaki-Zukoski, Geoffrey Mangalam, Peiman Aminabadi, Fernanda de Alexandre Sebastião, Beatriz Martinez-Lopez, Fred Conte, Oscar Illanes, Rodolfo Fong, Sarah Taber, Esteban Soto  
EVALUATION OF FOOD SAFETY RISKS IN AQUAPONIC PRODUCTION OF VEGETABLES AND TILAPIA
- 12:00 George B. Brooks Jr.**  
OBSERVATIONS ON THE BEHAVIOR AND FOOD PREFERENCES OF *Macrobrachium rosenbergii* IN DEEP WATER CULTURE AQUAPONIC GROW BEDS IN ARIZONA



- 12:15 George J. Pate**, Janelle V. Hager, Zackary W. Perry, Fred Gonzales, Leigh Anne Bright, Shawn D. Coyle, James H. Tidwell  
COMPARISON OF THE PRODUCTION OF BIBB LETTUCE *Lactuca sativa* REARED IN INDOOR AQUAPONIC SYSTEMS USING LARGE MOUTH BASS *Micropterus salmoides* VS. NILE TILAPIA *Oreochromis niloticus*
- 12:30 LUNCH**
- 1:30 Bryan Lester**, Andre Buchheister, Colin Savage, Rafael Cuevas-Uribe  
EVALUATION OF BASIL *Ocimum basilicum* VARIETIES GROWN IN AN AQUAPONIC SYSTEM IN HUMBOLDT, CALIFORNIA
- 1:45 Carlos León Ramos**  
RECIRCULATING AQUAPONICS USING SHRIMP, TILAPIA AND VEGETABLES IN A HYBRID SYSTEM
- 2:00 César Costa**, Glauce Oliveira  
HYDROPONIC PRODUCTION OF THE SEA ASPARAGUS *Salicornia neei* WITH RECIRCULATING SALINE WATER FROM A MARINE FISH CULTURE
- 2:15 Janelle V. Hager**, Zack Perry, E. Doug Blair, Shawn D. Coyle, James H. Tidwell  
EVALUATION OF BREWERS GRAINS IN TILAPIA *Oreochromis niloticus* DIETS AS APPLIED TO INCREASING AQUAPONICS SUSTAINABILITY
- 2:30 Paul Begue**, Tim Pfeiffer  
DEMONSTRATION OF A SMALL-SCALE DECOUPLED AQUAPONIC SYSTEM UTILIZING A FLOATING BEAD BIOCLARIFIER AND AIRLIFT TECHNOLOGY

## ZEBRAFISH HUSBANDRY WORKSHOP CONTINUED

Wednesday, February 21 8:30 - 4:30 Concorde B

Chair: Bobbi Baur

- 8:30 Samantha Peneyra**  
IMPACT OF SUPPLEMENTAL AGENTS ON DEVELOPMENT AND SURVIVAL OF CHLORINE-SANITIZED ZEBRAFISH EMBRYOS
- 9:00 Katy Murray**  
SUPERSATURATION AND GAS BUBBLE DISEASE IN LABORATORY ZEBRAFISH
- 9:20 Sean Spagnoli**  
PLUMBING THE DEPTHS: HISTOLOGY AS A RESOURCE FOR DIAGNOSTICS AND DISCOVERY
- 9:40 Marcus Crim**  
ADVANCES IN ZEBRAFISH HEALTH MONITORING
- 10:00 BREAK**
- 10:30 Michael Kent**  
PSEUDOCAPILLARIA AND EFFECTS ON THE MICROBIOME

- 11:00 Christine Lieggi**  
EMERGENCY PREPAREDNESS FOR ZEBRAFISH FACILITIES
- 11:20 Kathy Snell**  
BUDDY FISH
- 11:40 Megan Matsutani**  
GENOTYPING FIN CLIPS AT 14DPF
- 12:00 TBD**
- 12:30 LUNCH**
- 1:30 Robert Gerlai**  
KEYNOTE SPEAKER – ZEBRAFISH HUSBANDRY: THE BEHAVIORAL NEUR
- 2:30 Tormey Reimer**  
RAPID FISH GROWTH AND HEARING LOSS
- 3:00 Steve Watts**  
SINGLE CELL PROTEINS AS FISH MEAL REPLACEMENTS IN SEMI-PURIFIED ZEBRAFISH DIETS
- 3:45 Justin Sanders**  
OVERVIEW OF IMPACTS OF COMMON PATHOGENS ON RESEARCH ENDPOINTS
- 4:15 IZFS Intro Comments**  
IZFS INTRO AND COMMENTS
- 4:30 TOWN HALL MEETING in Concorde B**  
Maintaining Momentum: Solidifying the Foundation for Identifying and Meeting the Needs of the Zebrafish Research Community. The Town Hall Meeting is sponsored by Aquaneering, FishVet Group, IDEXX, Skretting and Zeigler.

## ORNAMENTALS

Wednesday, February 21 8:30 - 12:45 Concorde A

Chairs: Matt DiMaggio, Michael Schwarz, Michel Walsh, Steve Lochmann

- 8:30 Laura E. Cannella**, Travis G. Knorr, Michelle L. Walsh, Genya Yerkes, Greg Gerwin  
THE SPAWNING AND REARING OF THE BLUE NEON GOBY *Elacatinus oceanops* IN A LOW DENSITY SYSTEM ON A SMALL BUDGET
- 8:45 Elizabeth Groover**, Matthew DiMaggio, Micah Alo, Jon Degidio, Shane Ramee, Taylor Lipscomb, Michael Sipos  
GREENWATER CULTURE AND LARVAL DEVELOPMENT OF THE MELANURUS WRASSE *Halichoeres melanurus*
- 9:00 Michael J. Sipos**, Taylor N. Lipscomb, Amy L. Wood, Shane W. Ramee, Elizabeth M. Groover, Craig A. Watson, Matthew A. DiMaggio  
EVALUATION OF cGnRH IIa FOR INDUCED SPAWNING OF *Epalzeorhynchus bicolor* AND *Synodontis nigriventris*

- 9:15 Matthew DiMaggio**, Elizabeth M. Groover, Jon-Michael L.A. Degidio, Micah M. Alo, Craig A. Watson  
RECENT DEVELOPMENTS IN MARINE ORNAMENTAL AQUACULTURE AT THE UNIVERSITY OF FLORIDA'S TROPICAL AQUACULTURE LABORATORY
- 9:30 Shane Ramee**, Taylor Lipscomb, Matthew DiMaggio  
THE POTENTIAL USE OF ENVIRONMENTAL STRESSORS FOR MASCULINIZATION IN TWO ORNAMENTAL FISHES
- 9:45 Taylor Lipscomb**, Amy Wood, Shane Ramee, Michael Sipos, Elisabeth Groover, Matthew DiMaggio  
REPLACING *Artemia* IN THE LARVAL CULTURE OF SIX FRESHWATER ORNAMENTAL FISH
- 10:00 BREAK**
- 10:30 Kyle A. Hirt**, Travis G. Knorr, Michelle L. Walsh  
FROSTBITE CLOWNFISH *Amphiprion ocellaris* BREEDING AND DEVELOPMENT
- 10:45 Michelle L. "Mick" Walsh**, Travis G. Knorr, Patrick H. Rice  
FKCC PRODUCT DISBURSEMENT I: TRAINED AQUACULTURE TECHNICIANS
- 11:00 Travis G. Knorr**, Michelle L. Walsh, Lana Sielski, Patrick H. Rice  
FKCC PRODUCT DISBURSEMENT II: CULTURED MARINE ORNAMENTAL FISH
- 11:15 Breanna Soucy**, Travis G. Knorr, Michelle L. Walsh, Tim Morris, Robin Pearl  
TROPICAL ORNAMENTAL MARICULTURE TECHNICIAN PROGRAM AT FLORIDA KEYS COMMUNITY COLLEGE: A CASE STUDY FROM CAMPUS TO CAREER
- 11:30 Elizabeth Fairchild**, Jesse Trushenski  
IMPROVING WHITE WORM *Enchytraeus albidus* NUTRITION FOR ORNAMENTAL FISHES
- 11:45 Jose Reyes-Tomassini**, Brady Meyer, Lance Evans  
COMPARISON OF AQUI-S 20E AND MS-222 AS ANESTHETICS IN CLOWNFISH *Amphiprion ocellaris*
- 12:00 Lewis Eaton**, Saipul Rapi, Donna Snellgrove  
A COLLABORATIVE EFFORT TO SUPPORT MARINE ORNAMENTAL FISH CULTURE IN THE COUNTRY OF ORIGIN
- 12:30 LUNCH**
- 1:30 Courtney Ohs**, Jason Broach, Isaac Lee, Andrew Palau  
SUCCESSFUL CAPTIVE SPAWNING AND CULTURE OF REEF BUTTERFLYFISH *Chaetodon sedentarius*
- 1:45 Courtney Ohs**, Jason Broach, Isaac Lee, Andrew Palau  
SUCCESSFUL CAPTIVE SPAWNING AND CULTURE OF CUBAN HOGFISH *Bodianus pulchellus*
- 2:00 Chatham Callan**, Aurora Burgess, Cara Rothe, Renee Touse  
RECENT IMPROVEMENTS IN ADVANCING THE CULTURE OF YELLOW TANG *Zebrasoma flavescens*; AN UPDATE ON PROGRESS AT OCEANIC INSTITUTE

# CALIFORNIA AQUACULTURE: MULTIPLE SPECIES...MULTIPLE MARKETS

Wednesday, February 21 8:30 - 4:30 Champagne 1

Chair: Tony Vaught

WEDNESDAY

**8:30 California Production Overview**  
OPENING REMARKS

**8:45 Tony Vaught**  
INLAND AQUACULTURE. FINFISH, CAVIAR, RECREATIONAL FISH AND RESEARCH

**9:05 Don Kent**  
MARINE AQUACULTURE. SHELLFISH, FINFISH, AND SEAWEED

**9:25 Joel Van Eenennaam**  
CALIFORNIA CAVIAR: THE HISTORY OF WHITE STURGEON AQUACULTURE

**10:00 BREAK**

**10:30 Dan Malcom, Marshall Merrifield**  
AQUACULTURE AND BLUE ECONOMY INITIATIVES AT THE PORT OF SAN DIEGO

**10:55 Greg Dale**  
HUMBOLDT BAY HARBOR DISTRICT AQUACULTURE OVERVIEW

**11:20 Everard Ashworth**  
VENTURA PORT DISTRICT AQUACULTURE INITIATIVES, VENTURA SHELLFISH ENTERPRISE

**12:30 LUNCH**

## Technical Potpourri

Moderator: Michael Lee

**1:00 Keith Filer**  
ORGANIC MINERAL APPLICATIONS IN AQUACULTURE DIETS

**1:20 Randy Lovell**  
SACRAMENTO PERCH – PROSPECTS FOR COLLABORATING WITH PRIVATE AQUACULTURE FOR CONSERVATION, AQUAPONICS, LIVE SEAFOOD, AND ANGLER OPPORTUNITY

**1:40 Michael A. Shane, Mark A. Drawbridge**  
INFORMING FUTURE CONSUMERS AND RESOURCE STEWARDS THROUGH AQUACULTURE EDUCATION

**2:00 Jackson A. Gross, LeeRoy Carstensen**  
THE USE OF ELECTRICITY TO CONTROL BURROWING SHRIMP *Neotrypaea californiensis* IN SHELLFISH BEDS

**2:20 Tony Schuur**  
BOARD MEETING AND MEMBERSHIP MEETING CALIFORNIA AQUACULTURE ASSOCIATION

# AQUATIC ANIMAL HEALTH AND DIAGNOSTICS

Wednesday, February 21 8:30 - 4:30 Champagne 2

Chair: Kathleen Hartman

- 8:30 Katharine Starzel**  
AQUACULTURE EN ROUTE – STEPS TO MOVING HEALTHY ANIMALS AROUND THE WORLD
- 9:00 Kevin Snekvik**  
AQUACULTURE LABORATORIES: THE WHIRLPOOL AT THE CONFLUENCE OF REGULATORY TEST REQUIREMENTS, SAMPLING, AND FINANCIAL CONSTRAINTS
- 9:30 Bill Keleher**  
U.S. AQUATIC ANIMAL HEALTH REGULATIONS – A NEED TO CREATE A MORE HARMONIZED AND EFFECTIVE SYSTEM FOR AQUATIC ANIMAL TESTING AND MOVEMENT
- 10:00 BREAK**
- 10:30 Stephen Reichley**  
CONSIDERATIONS FOR IN-HOUSE DIAGNOSTICS IN AQUACULTURE
- 11:00 Kevin Snekvik**  
DON'T BE BLINDED BY THE BLING OF YOUR TEST: USING THE RIGHT LABORATORY ASSAY FOR THE RIGHT JOB
- 11:30 Debbie Plouffe**  
INNOVATION IN AQUACULTURE DIAGNOSTICS
- 12:00 Esteban Soto**  
DIAGNOSIS OF EMERGENT AND FASTIDIOUS PATHOGENS OF TILAPIA
- 12:30 LUNCH**
- 1:30 Paul Schofield, Brenda Noble, Tanner Padilla, Arun Dhar**  
THE UNIVERSITY OF ARIZONA'S AQUACULTURE PATHOLOGY LABORATORY WEST CAMPUS RESEARCH FACILITY: AN ICONIC SHRIMP RESEARCH FACILITY IN NORTH AMERICA – HISTORY, ACHIEVEMENTS AND THE FUTURE
- 1:45 Esteban Soto, Fernanda de Alexandre Sebastião, Matt Rogge, Alvin Camus, John Hansen**  
RECOMBINANT SUBUNIT VACCINES AGAINST PISCINE FRANCISELLOSIS
- 2:00 Timothy Bruce, Regg Neiger, Michael Brown**  
GASTROINTESTINAL MICROBIOTA AND IMMUNOLOGICAL RESPONSES OF RAINBOW TROUT *Oncorhynchus mykiss* FED MODIFIED SOYBEAN MEAL INGREDIENTS
- 2:15 Ghazala Jabeen, Maryam Tariq, Qurat-ul Ain, Sarwat Ishaq**  
ASSESSMENT OF BLOOD HEALTH, TOTAL PROTEIN CONTENT AND GILLS HISTOPATHOLOGY IN FISH INJECTED WITH PLASTICIZERS, DI-METHYL PHTHALATE AND DI-N-OCTYL PHTHALATE

WEDNESDAY

- 2:30 Raquel T. Pereira**, Thaiza R. Freitas, Mariel N. Tavares, Murilo C.B. Piva, Maarten J. van Schoonhoven, Priscila V. Rosa  
ENDOCRINE AND GOBLET CELLS DISTRIBUTION IN THE INTESTINE OF BRAZILIAN FISH TAMBAQUI AND HYBRID SPOTTED SORUBIM
- 2:45 Jordan N. Garry**, David D. Kuhn, Michael H. Schwarz, Stephen A. Smith, Daniel P. Taylor, Barbara Blackistone, Daniel E. Bütz, Mark E. Cook  
EXPERIMENTAL INDUCTION OF *Aeromonas hydrophila* IN TILAPIA FINGERLINGS ON A NOVEL ANTIBODY DIET
- 3:00 Nitin Challa**, William Duke, Grace Ramena  
THERAPEUTIC POTENTIAL OF BIOACTIVE COMPOUNDS FOR TREATING FISH DISEASE AND THEIR CYTOTOXIC AND GENOTOXIC EFFECTS
- 3:15 Ian A. Gardner**  
TO OR NOT TO POOL?: GUIDELINES FOR POOLING DECISIONS IN AQUATIC ANIMAL HEALTH SURVEILLANCE
- 3:30 Jesse P. James**, Terrill R. Hanson, Jeffery S. Terhune, Jesse A. Chappell, Cova R. Arias, Benjamin H. Beck, Benjamin R. LaFrentz, Eric Peatman, Peter Merrill, Esau Arana, Karen Veverica, William Hemstreet, Sunni Dahl, Luke A. Roy  
EVALUATION OF A TRIVALENT VACCINE FOR *Aeromonas hydrophila*, *Flavobacterium columnare* AND *Edwardsiella ictaluri* USING IN-POND RACEWAY SYSTEMS IN WEST ALABAMA

## AQUACULTURE DRUGS

Wednesday, February 21 10:30 - 12:30 Loire  
Chair: Jim Bowker

- 10:30 Ashmita Poudel**, Kathryn Mitchell, Robert M. Durborow  
ANTIBIOTIC SUSCEPTIBILITIES OF BACTERIA ISOLATED FROM THE SAME FISH IN CASES EXAMINED AT THE KENTUCKY STATE UNIVERSITY FISH DISEASE DIAGNOSTIC LABORATORY
- 10:45 Soner Bilen**, Husam Taher Elbishti, Randa Elbishti  
THERAPEUTICAL EFFECTS OF TETRA *Cotinus coggygia* IN RAINBOW TROUT *Oncorhynchus mykiss* AGAINST *Aeromonas hydrophila* INFECTION
- 11:00 Jim Bowker**, Cheyenne Owens, Niccole Wandelear  
USE OF AQUI-S20E, TRICAINE-S, AND AQUACALM TO SEDATE RAINBOW TROUT TO HANDLEABLE
- 11:15 Cheyenne Owens**, Madison Powell, T. Gibson Gaylord, James Bowker  
HEMATOLOGICAL RESPONSES OF RAINBOW TROUT TO CHEMICAL SEDATION USING TRICAINE, EUGENOL, AND METOMIDATE
- 11:30 Josip Barisic**, Brian Quinn  
EFFECTS OF SEA LICE TREATMENT ON HEALTH STATUS IN AQUACULTURE REARED RAINBOW TROUT *Oncorhynchus mykiss*

## PUBLIC PERCEPTIONS OF AQUACULTURE

Wednesday, February 21 1:30 - 4:30 Bordeaux

Chair: Kim Thompson

- 1:30 Halley E. Froehlich**, Rebecca R. Gentry, Michael B. Rust, Dietmar Grimm, Benjamin S. Halpern  
PUBLIC PERCEPTIONS OF AQUACULTURE: EVALUATING SPATIOTEMPORAL PATTERNS OF SENTIMENT AROUND THE WORLD
- 1:45 Cindy Sandoval**  
NOAA's COLLABORATIVE ENGAGEMENT TO ADDRESS THE SIGNIFICANT BARRIER OF PUBLIC PERCEPTION IN AQUACULTURE
- 2:00 Paula Sylvia**  
BLUE ECONOMY INITIATIVES AT THE PORT OF SAN DIEGO: EXPLORING REGIONAL OPPORTUNITIES FOR AQUACULTURE AND BLUE TECHNOLOGY
- 2:15 Jacqueline Claudia**  
USING A CONSUMER BRAND TO FACILITATE DISCUSSION ABOUT AQUACULTURE
- 2:30 Linda Cornish**  
BUILDING AWARENESS AND SKILLS FOR AQUACULTURE IN K-12 STUDENTS
- 2:45 Kimberly Thompson**, Jerry R. Schubel  
A GUIDE TO COLLABORATION AMONG DIVERSE STAKEHOLDER GROUPS TO ADDRESS PUBLIC MISPERCEPTIONS ABOUT MARINE AQUACULTURE IN THE U.S.
- 3:00 Kimberly Thompson**, Sebastian Belle, Halley Froehlich, Robert Jones, Michael B. Rust, Wojciech Wawrzynski  
ALIGNING MARINE AQUACULTURE PERSPECTIVES WITH THE CURRENT STATE OF THE SCIENCE: A PANEL DISCUSSION

WEDNESDAY

## CONSERVATION AND RESTORATION

Wednesday, February 21 1:30 - 4:30 Burgundy

Chair: Josh Patterson

- 1:30 Emmet Guy**, Menghe Li, Peter Allen  
THE EFFECT OF DIFFERENT DIETARY PROTEIN LEVELS ON GROWTH OF JUVENILE (AGE-1) BLACK BUFFALO *Ictiobus niger*
- 1:45 Bijoy Kumar Ghosh**  
SEASONAL VARIATION OF FISH MIGRATION IN SARIAKANDHI FISH PASS IN BANGLADESH
- 2:00 Wilfrido Contreras-Sánchez**, María J. Contreras-García, Alejandro Mcdonal-Vera, Leonardo Cruz-Rosado, Arlette Hernández-Franyutti, Ulises Hernández-Vidal, Rafael Martínez-García, Guillermo González-González, Rama K. Heredia-Álvarez, Felipe Ramón-Zapata, Jenny Vázquez-Gómez  
RECENT ADVANCES IN THE CULTURE OF NATIVE MARINE SPECIES FROM THE COAST OF TABASCO, MEXICO

- 2:15 Yue Liu**, Terrence Tiersch  
GERMPLASM REPOSITORIES CAN PROVIDE A NECESSARY TOOL FOR RECOVERY PROGRAMS OF IMPERILED FISHES
- 2:30 Elena N. Ponomareva**, Angelina V. Firsova  
THE SELECTION OF A TEMPERATURE MODE OF FREEZING DURING CRYOPRESERVATION OF INCONNU OOCYTES
- 2:45 Kathryn Lohr**, Kayla Ripple, Joshua Patterson  
EFFECTS OF GENOTYPE AND ENVIRONMENT ON CULTURED CORALS FOLLOWING RESTORATION
- 3:00 Joshua Patterson**, Kathryn Lohr, Rachel Serafin, Keri O'Neil  
STATUS OF LAND-BASED CULTURE EFFORTS TO SUPPORT SEXUAL REPRODUCTION IN THREATENED CARIBBEAN CORALS
- 3:15 Scott Borsum**, Melanie Fuoco, Gulnihal Ozbay  
POPULATION DYNAMICS OF THE EASTERN OYSTER *Crassostrea virginica* IN DELAWARE INLAND BAY'S ESTUARINE ECOSYSTEMS PRIOR TO SHELLFISH AQUACULTURE
- 3:30 Rebecca Lucas**, Betty Staugler, Chris Dervinis, Matias Kirst, Josh Patterson  
DEVELOPMENT OF MICROSATILLITES FOR PARENTAGE ANALYSIS IN BAY SCALLOPS *Argopecten irradians* SPAWNED FOR RESTORATION

## FINFISH NUTRITION

Wednesday, February 21 1:30 - 4:30 Concorde C

Chair: Delbert Gatlin

- 1:30 Sergio Castillo**, Delbert M. Gatlin III  
HIGH DIETARY LEVELS OF BRANCHED-CHAIN AMINO ACIDS AFFECT GROWTH PERFORMANCE AND AMINO ACID UTILIZATION IN RED DRUM *Sciaenops ocellatus*
- 1:45 Waldemar Rossi Jr.**, Vikas Kumar, Brittany Woodward  
DIETARY METHIONINE REQUIREMENT OF LARGEMOUTH BASS *Micropterus salmoides* L.
- 2:00 Beth Cleveland**, Peggy Biga  
SUPPLEMENTING RAINBOW TROUT BROODSTOCK DIETS WITH CHOLINE AND METHIONINE IMPROVES OFFSPRING GROWTH
- 2:15 Adejoke Abidemi Adesola**, Clifford Jones, Thomas Shipton  
DIETARY ESSENTIAL AMINO ACID REQUIREMENT OF DUSKY KOB *Argyrosomus japonicus*
- 2:30 Donald Davis**, Lay Nguyen, Guillaume Salze, Shima Salem  
IDEAL PROTEIN CONCEPT AND ITS APPLICATION IN PRACTICAL DIETS FOR NILE TILAPIA *Oreochromis niloticus*
- 2:45 Delbert Gatlin III**, Alton Burns, Alejandro Velásquez  
DISPENSABLE AMINO ACIDS OF IMPORTANCE IN FISH NUTRITION



- 3:00 Ken Overturf**, Thomas Welker, Madison Powell  
EVALUATION OF THE ACUTE AND CHRONIC IMMUNE RESPONSE OF SALMONIDS AFTER BEING FED A PLANT PROTEIN-BASED FEED
- 3:15 Abigail B. Bockus**  
EFFECTS OF HYPER- AND HYPOSMOTIC EXPOSURE AND FEEDING REGIME ON POSTPRANDIAL PROCESSING IN SPOTTED SEATROUT *Cynoscion nebulosus*
- 3:30 Christopher Jackson**, Jesse Trushenski  
REEVALUATING THE ESSENTIAL FATTY ACID REQUIREMENTS OF NILE TILAPIA *Oreochromis niloticus*
- 3:45 Amit Yadav**, Waldemar Rossi, Vikas Kumar, Habte-Michael Habte-Tsion  
RESPONSES OF JUVENILE LARGEMOUTH BASS *Micropterus salmoides* TO DIETARY EPA AND DHA-RICH OILS
- 4:00 Christopher Jackson**, Jesse Trushenski, Michael Schwarz  
REEVALUATING THE ESSENTIAL FATTY ACID REQUIREMENTS OF FLORIDA POMPANO *Trachinotus carolinus*
- 4:15 Shafaq Fatima**, Hina Ashraf, Sania Ayyaz, Humaira Amman, Asma Abdul Latif  
THE EFFECT OF LINSEED ON GROWTH AND FATTY ACID PROFILE IN GRASS CARP *Ctenopharyngodon idella*

## PRE/PRO-BIOTICS

Wednesday, February 21 1:30 - 4:30 Champagne 3

Chair: David Kuhn

- 1:30 Andrea M. Tarnecki**, Marzie Wafapoor, Kevan Main, Nicole Rhody  
UNRAVELING THE MECHANISM BEHIND PROBIOTIC BENEFITS IN RECIRCULATING AQUACULTURE SYSTEMS
- 1:45 Hoa Nguyen Phu**, Tung Vo Phuong, Bao Nguyen Van, Tu Nguyen Van  
INVESTIGATING THE EFFECTS OF DIFFERENT FEED AND PROBIOTICS ON THE SURVIVAL AND GROWTH OF GOBY *Oxyeleotris marmorata* (BLEEKER, 1852) FROM 3-45 DAYS OLD
- 2:00 Diane Kapareiko**, Dorothy Jeffress, Thomas Hashman, Gary H. Wikfors  
EFFECTS OF FREEZE-DRIED AND SPRAY-DRIED PREPARATIONS OF MILFORD PROBIOTIC BACTERIAL STRAIN OY15 IN PREVENTING BACTERIOSIS AND IMPROVING SURVIVAL OF LARVAE OF THE EASTERN OYSTER *Crassostrea virginica*
- 2:15 Oscar Galagarza**, David Kuhn, Stephen Smith, Joseph Eifert  
IMMUNOMODULATION IN NILE TILAPIA *Oreochromis niloticus* FOLLOWING A DIETARY SUPPLEMENTATION OF DIFFERENT *Bacillus subtilis* STRAINS
- 2:30 Wren A. Busby**, Ione Hunt von Herbing  
A MULTI-STRAIN PROBIOTIC, RED DRUM *Sciaenops ocellatus*, AND DIGESTA: THE NITTY-GRITTY ABOUT CHANGES SEEN OVER TIME

- 2:45 Susan Knudson**, Becky Rivoire, Luke Keeton  
ISOLATION OF VIBRIO SPECIES AND POTENTIAL ANTAGONISTS FROM OYSTER SPECIES FROM DIFFERENT GEOGRAPHICAL REGIONS
- 3:00 Brian Peterson**, Brian Bosworth, Menghe Li  
GROWTH PERFORMANCE, SURVIVAL, AND PROCESSING CHARACTERISTICS OF HYBRID CATFISH FED PRE AND PROBIOTICS
- 3:15 Min Ju**, Delbert M. Gatlin III  
PHYSIOLOGICAL RESPONSES AND MORTALITY OF HYBRID STRIPED BASS *Morone chrysops* × *Morone saxatilis* SUBJECTED TO ACUTE STRESS AFTER BEING FED DIETARY PREBIOTIC AND PROBIOTIC SUPPLEMENTS
- 3:30 João Fernando Koch**, Janine Di Domenico, Lucas Figueiredo Soveral, IFernando Oliveira Roberti Filho, Luiz Carlos Kreutz  
DIETARY β-GLUCAN IN SILVER CATFISH *Rhamdia quelen* DIETS AND THE SURVIVAL AFTER A CHALLENGE WITH *Aeromonas hydrophila*
- 3:45 Joe M. Fox**, Ivy Jones, Anthony J. Siccardi III, Allan Leblanc  
PRELIMINARY EVALUATION OF FEEDKIND AQUA PROTEIN (TM) AS A PROTEIN SOURCE IN DIETS FED TO JUVENILE *Litopenaeus vannamei*
- 4:00 Luke Keeton**, Susan Knudson, Jeremy Ellis  
METAGENOMIC ANALYSIS OF PROBIOTIC EFFECT ON SHRIMP MICROBIAL COMMUNITY
- 4:15 Haham Kim**, Ali Hamidoghli, Seonghun Won, Sungchul C. Bai  
SYNERGETIC EFFECTS OF DIETARY PROBIOTICS WITH PREBIOTICS ON GROWTH PERFORMANCE OF JAPANESE EEL *Anguilla japonica*

## OFFSHORE AQUACULTURE

Wednesday, February 21 1:30 - 4:30 Versailles 2

Chair: Benny Tetsuzan



- 1:30 Patrick Takahashi**, Leighton Chong, Ron Tetsuzan  
BLUE REVOLUTION HAWAII: PROPOSAL FOR A PACIFIC INTERNATIONAL OCEAN STATION
- 1:45 Tetsuzan Ron**  
RENEWABLE ENERGY FOR OFFSHORE AQUACULTURE
- 2:00 David Fredriksson**, Andrew Drach, David Kriebel  
ENVIRONMENTAL DESIGN CONDITIONS FOR AN OFFSHORE AQUACULTURE SITE IN THE GULF OF MEXICO
- 2:15 James Morris**, Kenneth Riley, Amit Malhortra  
WAVE EXPOSURE MODELLING TO SUPPORT AQUACULTURE SITING

- 2:30 James Morris**, Lisa Wickliffe, Dave Stein, Mark Finkbeiner  
INTRODUCING THE MARICULTURE SPATIAL ATLAS: AN AQUACULTURE SPATIAL SCREENING TOOL FOR THE U.S. EXCLUSIVE ECONOMIC ZONE
- 2:45 Barry King**, Najat El Moutchou, Trevor Carpenter, James A. Morris Jr.  
MODELING OFFSHORE FINFISH AQUACULTURE IN MOROCCO: A CASE STUDY USING DEPOMOD TO INFORM ENVIRONMENTAL GOVERNANCE
- 3:00 Trent Henry**, Lisa C. Wickliffe, Paula Sylvia, James A. Morris Jr.  
A SPATIAL OPPORTUNITY ANALYSIS TO INFORM AQUACULTURE DEVELOPMENT PLANNING IN SAN DIEGO BAY, CALIFORNIA
- 3:15 Kristen Gruenthal**, Caird Rexroad III, Michael Rust  
THE GENETICS INITIATIVE AT THE OFFICE OF AQUACULTURE: RISKS, BENEFITS, AND FINDING BALANCE FOR MARINE AQUACULTURE
- 3:30 Janet Whaley**, Jess Beck, Rich Malinowski, Kathleen Hartman, Katharine Starzel  
APPROACH TO AQUATIC ANIMAL HEALTH MANAGEMENT IN OFFSHORE AQUACULTURE SETTINGS
- 3:45 Neil Anthony Sims**  
WHAT'S WRONG WITH OFFSHORE AQUACULTURE PERMITTING? ... AND HOW TO MAKE IT RIGHT
- 4:00 Langley Gace**  
THE COMPLETE OPEN OCEAN FARMING PLATFORM

## VETERINARY FEED DIRECTIVE RULE CHANGE: HOW DOES THIS AFFECT YOU?

Wednesday, February 21 1:30 - 4:30 Loire  
Chairs: Jim Bowker, Paul Zajicek

- 1:30 Jennifer Matysczak**  
A BEGINNERS GUIDE TO MEDICATED FEEDS
- 2:00 Mike Murphy**  
MEDICALLY IMPORTANT ANTIMICROBIALS IN ANIMAL AQUACULTURE AFTER JANUARY 1, 2017
- 2:30 Patricia S. Gaunt**  
FRESH FROM THE FIELD: ANTIMICROBIALS AND VETERINARY FEED DIRECTIVE DRUGS IN AQUACULTURE
- 3:15 PANEL DISCUSSION**

# THURSDAY, February 22

## RECIRCULATING AQUACULTURE SYSTEMS

Thursday, February 22 8:30 - 10:00 Versailles 3

Chair: Tim Pfeiffer

Sponsor: Aquacultural Engineering Society

- 8:30** **Frédéric Gaumet**, Knut Hofseth, Andreas L. Brunstad, Heidi Kyvik  
THE PARADIGM SHIFT IN SALMON PRODUCTION: CHALLENGES AND POTENTIAL OF LARGE INDUSTRIAL LAND-BASED PLANTS FOR POST SMOLTS AND MARKET SIZE FISH
- 8:45** **Steven Summerfelt**, John Davidson, Christine Lepine, Scott Tsukuda, Kevin Schrader, Christopher Good  
MEMBRANE BIOLOGICAL REACTORS TO REMOVE NITRATE, DIGEST BIOSOLIDS, AND ELIMINATE WATER FLUSHING REQUIREMENTS WITHIN REPLICATED RECIRCULATION SYSTEMS CULTURING RAINBOW TROUT
- 9:00** **Edward D. Aneshansley**  
WATER CONSERVATION STRATEGIES FOR URBAN SALTWATER AQUACULTURE FACILITIES WITH A CASE STUDY REVIEW OF A (145) METRIC TON (MT) BRANZINO *Dicentrarchus labrax* FACILITY IN WATERBURY CONNECTICUT, USA
- 9:15** **John Davidson**, Christopher Good, Kevin Schrader, Steven Summerfelt  
EFFECTS OF SEMI-CONTINUOUS PERACETIC ACID DOSING ON RAINBOW TROUT *Oncorhynchus mykiss* PERFORMANCE, WATER QUALITY, AND OFF-FLAVOR COMPOUNDS IN RECIRCULATION AQUACULTURE SYSTEMS
- 9:30** **Thomas Mason**, Ken Semmens  
EVALUATION OF TWO SALT TREATMENTS FOR HOLDING MARKET SIZE LARGEMOUTH BASS *Micropterus salmoides* AS A FOOD FISH
- 9:45** **Sujan Bhattarai**, Kenneth Semmens  
EVALUATION OF STOCKING DENSITY IN A LIVE HOLDING RECIRCULATING SYSTEM FOR FOOD SIZE CHANNEL CATFISH *Ictalurus punctatus*
- 10:00** **BREAK**
- 11:00** **Samuel Couture Brochu**, Marnix Faes, Louis-David Coulombe, Julien Roy  
ARTIFICIAL INTELLIGENCE TO GAIN VALUABLE INSIGHT ON AQUATIC ORGANISMS
- 11:15** **Aikaterini Spiliotopoulou**, Paula Rojas-Tirado, Richard Martin, Lars-Flemming Pedersen, Henrik-Rasmus Andersen  
DETERMINATION OF REQUIRED OZONE DOSAGE IN FRESHWATER PILOT RECIRCULATING AQUACULTURE SYSTEMS AND OZONE EFFECT ON WATER QUALITY PARAMETERS

THURSDAY

## WATER QUALITY AND EFFLUENTS

Thursday, February 22 8:30 - 11:30 Champagne 2

Chair: David Brune

- 8:30 Liping Liu**, Kai Zhang, Kang Li, Menghai Zhou, Jia Zhan, Qinlang Liang, Zongwen Wu  
REDUCING OFF-FLAVOUR COMPOUNDS GEOSMIN AND 2-METHYLISOBORNEOL IN TILAPIA THROUGH DIFFERENT CULTIVATION TECHNOLOGIES
- 8:45 Suan Shi**, Jing Li, David Bliersch  
LACTIC ACID PRODUCTION FROM SOLID CATFISH WASTE (MANURE)
- 9:00 Rhine Perrin**, Ron Malone  
TREATMENT OF AQUACULTURE WASTE LAGOON EFFLUENTS USING RECIRCULATING POLYGEYSER® TECHNOLOGY
- 9:15 Troy Rezek**, Barry King, James Morris  
PARTICLE DEPOSITION ANALYSIS TO INFORM ENVIRONMENTAL MODELING FOR RED DRUM AQUACULTURE IN THE GULF OF MEXICO
- 9:30 Shamim Naigaga**, Claude E. Boyd, Joseph Molnar  
SUITABILITY OF BASIC WATER QUALITY CONDITIONS FOR AQUACULTURE IN UGANDA
- 9:45 David E. Brune**  
NITRIFICATION AND DENITRIFICATION IN ZERO DISCHARGE AQUACULTURE
- 10:00 BREAK**
- 11:00 David E. Brune**  
OBSERVATIONS OF AN INVERSE AMMONIA TOXICITY RELATIONSHIP IN THE BRINE SHRIMP *Artemia*
- 11:15 Salma Sultana**, Rahat Kiran, Tayyaba Sultana, Shahid Mahboob Rana  
WASTEWATER AND TEXTILE INDUSTRY EFFLUENT TOXICITY: DECLINING TRENDS IN LIPID PROFILE IN THE GONADS OF *Labeo rohita*
- 11:30 Tayyaba Sultana**, Muhammad Arshad Rana, Salma Sultana, Shahid Mahboob Rana  
DNA DAMAGE IN MAJOR CARP INDUCED BY ACUTE EXPOSURE TO POLLUTED DRAIN WATER

THURSDAY

## EDUCATION AND OUTREACH

Thursday, February 22 8:30 - 11:30 Bordeaux

Chair: Ken Thompson

- 8:30 Kenneth Thompson**, Kirk Pomper, James Tidwell  
EVALUATION OF A MENTORSHIP PROGRAM IN AQUACULTURE: A QUALITATIVE STUDY TO IDENTIFY HIGH SCHOOL STUDENTS' PERCEPTIONS AND EXPERIENCES
- 8:45 Claude E. Boyd**  
WATER SCIENCE IN AQUACULTURAL EDUCATION

- 9:00 Emma Wiermaa**, Greg Fischer, Chris Hartleb  
UNIQUE AQUACULTURE RESEARCH AND DEMONSTRATION FACILITY EDUCATES THE FUTURE, BEGINNING, AND ESTABLISHED BUSINESSES THROUGH INTERACTIVE TRAINING OPPORTUNITIES
- 9:15 Zachariah Chambers**, Brandon Hall  
INTEGRATING AQUAPONICS INTO THE COLLEGE CURRICULUM
- 9:30 Gertrude Atukunda**, Joseph Molnar, Moureen Matuha, Theodora Hyuha, John Walakira, Safina Namatovu, Gertrude Abalo  
INSTITUTIONAL AND HOUSEHOLD FACTORS IN PROMOTING THE ROLE OF WOMEN IN AQUACULTURE VALUE CHAIN IN UGANDA
- 9:45 Gulnihal Ozbay**, Jennifer Volk, Erin Lane  
NORTHEAST CLIMATE HUB 360° OF CLIMATE EDUCATION: A VIRTUAL TOUR FOR SUSTAINABLE AQUACULTURE PRACTICES
- 10:00 David Cline**  
DEVELOPING A VISITOR LEARNING CENTER FOR PUBLIC AQUACULTURE/ AQUATIC EDUCATION

THURSDAY

## CRUSTACEAN DISEASE

Thursday, February 22 8:30 - 10:15 Champagne 1

Chair: Arun Dhar



- 8:30 John Buchanan**, Tiago Hori, Melissa Allen, Jason Stannard  
GENOMIC SELECTION AND THE FUTURE OF BREEDING IN SHRIMP
- 8:45 Arun Dhar**, Patharapol Piamsomboon, Luis Fernando Aranguren Caro, Siddhartha Kanrar  
FIRST REPORT OF THE PRESENCE OF ACUTE HEPATOPANCREATIC NECROSIS DISEASE (AHPND) IN TEXAS, USA
- 9:00 Siddhartha Kanrar**, Arun K. Dhar  
DETECTION OF A MICROSPORIDIUM IN FROZEN ARTEMIA
- 9:15 Maarten Jay van Schoonhoven**, Raquel Tatiane Pereira  
INCREASING SURVIVAL RATES IN WHITE LEG *L. vannamei* SHRIMP CULTURE AFFECTED BY *Vibrio harveyi* AND *Vibrio parahaemolyticus* CAUSING EMS, WITH ALGAE-INTERSPACED CLAY AND COPPER
- 9:30 Luis Fernando Aranguren**, Arun K. Dhar  
NEW METHODS FOR THE DETECTION AND QUANTIFICATION OF HEPATOBACTER PENAEI (NHPB) BY PCR AND qPCR
- 9:45 Craig L. Browdy**, Diego Flores, Peter Van Wyk, Susan Laramore  
REVISITING HATCHERY BIOSECURITY AND RISK MANAGEMENT
- 10:00 Hsin-Wei**, Kuo Winton, Cheng  
THE REGULATION OF PHYSIOLOGY AND IMMUNOLOGY BY TYROSINE HYDROXYLASE ON *Litopenaeus vannamei*

## SHELLFISH

Thursday, February 22 8:30 - 12:30 Chablis

Chair: Gulnihal Ozbay

- 8:30 Ashley Baum**, Ahmed Mustafa, Kenneth Saillant  
THERAPEUTIC EFFECTS OF INVERTEBRATES: FUTURE OF AQUACULTURE
- 8:45 Kenneth Saillant**, Ahmed Mustafa, Ashley Baum, Regina Shannon  
STRESS PHYSIOLOGY OF ECHINODERMS IN AQUACULTURE
- 9:00 Catherine Purcell**, Rick Masonbrink, Andrew Severin, John Hyde  
DEVELOPMENT OF GENOMIC RESOURCES TO AID U.S. COMMERCIAL ABALONE  
PRODUCTION AND RESTORATION CULTURE
- 9:15 Mojibar Rahman**, Shahroz Mahean Haque  
AN OVERVIEW OF THE STATUS AND POTENTIAL OF THE MUD CRAB FISHERY IN  
COASTAL BANGLADESH: PROSPECT, STRATEGIES, APPROACHES
- 9:30 Adriane Michaelis**, Don Webster, L. Jen Shaffer  
WATERMEN AND FARMERS: THE PLACE OF TRADITIONAL FISHERMEN IN  
MARYLAND OYSTER AQUACULTURE
- 9:45 Laura H. Spencer**, Brent Vadopalas, Crystal Simchick, Ryan Crim,  
Frederick W. Goetz, Steven Roberts  
GENETIC CHARACTERIZATION OF WILD AND HATCHERY-PRODUCED *Ostrea lurida*  
IN PUGET SOUND, WASHINGTON
- 10:00 BREAK**
- 11:00 Kenneth Riley**, Jud Kenworthy, Christine Voss, Doug Munroe, James Morris  
STATE OF SCIENCE ASSESSMENT: HOW FARMING SHELLFISH IMPACTS  
SUBMERGED AQUATIC VEGETATION
- 11:15 Matthew D. Campbell**, Steven G. Hall  
NUTRIENT CYCLING DYNAMICS OF AN ALGAE-OYSTER SYSTEM
- 11:30 Gulnihal Ozbay**  
MONITORING TOTAL BACTERIA AND VIBRIONACEAE IN EASTERN OYSTERS  
*Crassostrea virginica* EXPOSED TO VARIOUS WATER QUALITY STRESSES
- 11:45 Jonathan van Senten**, Carole R. Engle  
THE COSTS OF REGULATORY COMPLIANCE ON WEST COAST SHELLFISH FARMS:  
EFFECTS AND IMPACTS ON PRODUCERS

THURSDAY

# NEW AND EMERGING TECHNOLOGIES FOR STRIPED BASS AND HYBRID STRIPED BASS PRODUCTION

Thursday, February 22 8:30 - 12:30 Concorde A

Chair: Anita Kelly

THURSDAY

- 8:30 Mike Freeze**  
PERTINENT UPDATES FROM THE NATIONAL AQUACULTURE ASSOCIATION THAT AFFECT HYBRID STRIPED BASS PRODUCERS
- 8:45 Anita M. Kelly**  
UAV USE AS A BIRD DETERRENT ON HYBRID STRIPED BASS PONDS
- 9:00 Benjamin Reading**, Robert Clarke, Andrew McGinty, Michael Hopper, Linnea Anderson, Erin Ducharme, Sarah Rajib, Linas Kenter, David Berlinsky  
NC STATE UNIVERSITY UPDATES ON THE NATIONAL PROGRAM FOR GENETIC IMPROVEMENT AND SELECTIVE BREEDING FOR THE HYBRID STRIPED BASS INDUSTRY
- 9:30 Benjamin Reading**, Robert Clarke, Andrew McGinty, Michael Hopper, Linnea Anderson, Linas Kenter, David Berlinsky  
METHODS OF DOMESTIC STRIPED BASS *Morone saxatilis* SPAWNING THAT DO NOT REQUIRE THE USE OF ANY HORMONAL INDUCTION PROCEDURES
- 9:45 Bart Green**, Steven D. Rawles, Carl D. Webster, S. Adam Fuller, Matthew E. McEntire  
HOW MIGHT THE BIOFLOC PRODUCTION SYSTEM BE USED FOR HYBRID STRIPED BASS CULTURE?
- 10:00 BREAK**
- 11:00 Delbert M. Gatlin III**  
UPDATE ON HYBRID STRIPED BASS NUTRITION RESEARCH AT TEXAS A&M UNIVERSITY
- 11:15 David L. Straus**  
PERACETIC ACID: THE LONG ROAD TO INTRODUCTION OF THIS DISINFECTANT INTO U.S. AQUACULTURE
- 11:30 Katie McCann**, Rebecca Lochmann, Steven Rawles  
MINIMIZING FISHMEAL IN HYBRID STRIPED BASS DIETS USING COMMERCIAL PROTEIN CONCENTRATES
- 11:45 Adam Fuller**  
DNA METHYLATION PROFILES CORRELATE TO STRIPED BASS SPERM FERTILITY: POTENTIAL IMPLICATIONS FOR FUTURE BREEDING ACTIVITIES
- 12:00 Anita M. Kelly**  
2017 STRIPED BASS INDUSTRY UPDATE
- 12:15 Tyler Faucette**  
STRIPED BASS GROWERS ASSOCIATION MEMBERS AND BUSINESS MEETING



## U.S. TROUT FARMERS ASSOCIATION SESSION

Thursday, February 22 8:30 - 12:30 Champagne 3

Chair: Gary Fornshell

- 8:30 Jonathan van Senten**, Carole Engle  
THE FARM LEVEL EFFECTS OF REGULATIONS ON U.S. TROUT PRODUCERS
- 8:45 David L. Straus**  
PERACETIC ACID: A NEW TOOL FOR FACILITY BIOSECURITY
- 9:00 Jeff Hinshaw**  
TRANSPORTING TROUT: MANAGING WATER CHEMISTRY AND PHYSIOLOGICAL EFFECTS
- 9:15 Ken Cain**  
CHALLENGES TO THE DEVELOPMENT OF NEW DISEASE MANAGEMENT TOOLS/  
PRODUCTS FOR AQUACULTURE
- 9:30 Gary Fornshell**  
STATUS OF TROUT AQUACULTURE
- 10:00 Jeremy Liley**  
U.S. TROUT FARMERS ASSOCIATION MEMBERS AND BUSINESS MEETING

THURSDAY

## TILAPIA AQUACULTURE

Thursday, February 22 8:30 - 12:30 Versailles 2

Chair: Jim Franklin

- 9:30 Kassaye Balkew Workagegn**, Gunnar Klemetsdal, Elias Dadebo,  
Hans Magnus Gjøen  
PREDICTION AND GENETIC PARAMETERS OF FILLET TRAITS IN THREE  
NILE TILAPIA *Oreochromis niloticus* STRAINS BASED ON THEIR BODY  
MEASUREMENTS
- 9:45 Brian K. Catanzaro**  
IMPROVED GENETICS AND A NOVEL FEEDING STRATEGY FOR INCREASED  
GROWTH RATES OF NILE TILAPIA *Oreochromis niloticus* IN A RECIRCULATING  
AQUACULTURE SYSTEM
- 10:00 Madhav K. Shrestha**, James S. Diana, Hillary S. Egna  
TILAPIA AQUACULTURE IN NEPAL: HISTORY FROM INTRODUCTIONS TO  
FARMERS PONDS
- 10:15 BREAK**
- 11:00 Chinnaiah Amutha**, Abhijit Manna  
LACCASE-SILICA NANOPARTICLE CONJUGATES CAN EFFICIENTLY REDUCE THE  
EARLY MATURATION RISK DUE TO BISPHENOL A (BPA) IN FEMALE *Oreochromis*  
*mossumbicus* AND ITS TOXIC LOAD FROM THE CONTAMINATED EFFLUENT
- 11:30 David Kuhn**, Jarred Callura, Richard Peterson, Stephen Smith, Oscar Galagarza  
PRECISION GENETICS FOR IMPROVING PRODUCTION TRAITS OF TILAPIA

- 11:45 Razieh Farzad**, Sean O’Keefe, Stephen Smith, Andrew Neilson, David Kuhn  
DIETARY SUPPLEMENTATION DURING PRODUCTION AND SURVEY OF  
MICRONUTRIENTS OF TILAPIA *Oreochromis niloticus* IN THE U.S. MARKETPLACE
- 12:00 Fabio Soller**, Kathleen Ramm, Spencer Davis, Zhi Yong Ju  
ORGANOLEPTIC CHARACTERISTICS AND SENSORY ACCEPTANCE OF FILLETS OF  
TILAPIA *Oreochromis mossambicus* CULTURED IN FRESHWATER OR SEAWATER
- 12:15 Abdul Mateen**, Maliha Abbas  
IMMUNE STATUS AND GROWTH RESPONSE OF NILE TILAPIA *Oreochromis  
niloticus* TOWARDS OXYTETRACYCLINE SUPPLEMENTED FEED

## AQUAFISH TECHNICAL SESSION: AQUAFISH INNOVATIONS FOR INTERNATIONAL AQUACULTURE

Thursday, February 22 8:30 - 5:00 Loire

Chair: Hillary Egna

THURSDAY

- 8:30 Daniel Adjei-Boateng**, Anthony Aliebe, Nelson Winston Agbo,  
Emmanuel A. Frimpong  
EFFECT OF DIFFERENT FEEDING STRATEGIES ON GROWTH PERFORMANCE AND  
ECONOMIC RETURNS OF NILE TILAPIA *O. niloticus* PRODUCTION IN SEMI-  
INTENSIVE SYSTEM
- 8:45 Kenneth Rono**, Julius Manyala, David Lusega, Charles Ngugi, Kevin Fitzsimmons,  
Hillary Egna  
EFFECT OF IRON-AMINO ACID CHELATE SUPPLEMENTED FISH FEEDS ON  
GROWTH PERFORMANCE OF NILE TILAPIA *Oreochromis niloticus* IN AN  
AQUAPONIC SYSTEM IN KENYA
- 9:00 Courtney A. Deck**, Scott A. Salger, Kaniz Fatema, Russell J. Borski  
EFFECTS OF NUTRITIONAL CONDITIONING ON GROWTH OF NILE TILAPIA FRY
- 9:15 Kwasi Obirikorang**, Maame Esi Goode, Stephen Gyamfi, Regina Edziyie,  
Steve Amisah  
DIGESTIBILITY AND AMMONIA EXCRETION RATES OF LOW-COST NURSERY  
DIETS FOR NILE TILAPIA *Oreochromis niloticus* FRY
- 9:30 Minh Duc Pham**, Thi Thanh Hien Tran, Van Khanh Nguyen, Thi Tuyet Hoa Tran,  
Minh Phu Tran, Dave A. Bengtson  
PELLET FEED IMPROVEMENTS THROUGH VITAMIN C SUPPLEMENTATION FOR  
SNAKEHEAD FISH *Channa striata* CULTURE IN VIETNAM
- 9:45 Nazael Madalla**, Lugano Hezron, Sebastian Chenyambuga  
DEVELOPMENT OF TECHNIQUE FOR MASS PRODUCTION OF HOUSEFLY *Musca  
domestica* MAGGOTS
- 10:00 BREAK**
- 11:00 Narayan P. Pandit**, Jay D. Bista, Rahul Ranjan, Madhav K. Shrestha,  
James S. Diana  
EFFECT OF STOCKING DENSITY ON FRY SURVIVAL AND GROWTH OF SAHAR  
*Tor putitora*

- 11:15 Phanna Nen**, Phen Chheng, Nam So, Tran Thi Thanh Hien, Bui Minh Tam, Hillary Egna, David Bengtson  
PERFORMANCE OF DOMESTICATED (VIETNAMESE) VS. NON-DOMESTICATED (CAMBODIAN) SNAKEHEAD *Channa striata* DURING WEANING AND GROWOUT
- 11:30 John Walakira**, Casius Aruho, Bridget Kimera, Euglance Ganda, Lydia Nakasiga, Joseph Molnar, Ben Readings, Russell Borski  
AQUACULTURE OF AFRICAN LUNGFISH *Protopterus aethiopicus* IN UGANDA: CAPTIVE BREEDING AND LARVAL REARING
- 11:45 Zahid Parvez Sukhan**, M. Lokman Ali, S. Mahen Haque, M. Gias Uddin, M. Jabir Al Mehedi, Russell Borski  
POTENTIAL FOR POLYCULTURE OF TILAPIA *Oreochromis niloticus* AND FRESHWATER PERCH *Anabas testudineus* WITH PANGASIUS CATFISH *Pangasius hypophthalmus* IN THE HYPOSALINE WATERS OF SOUTHERN BANGLADESH
- 12:00 Jay D. Bista**, Narayan P. Pandit, Rahul Ranjan, Madhav K. Shrestha, James S. Diana  
INDUCED SPAWNING OF SAHAR *Tor putitora* IN TERAJ REGION OF NEPAL
- 12:15 Zech Halasi**, Theodora Hyuha, Gabriel Elepu, William Ekere, Peter Walekwa, Joseph Molnar, Kalumba Sloans, Egnar Hillary  
CONSUMER PREFERENCES AND CONSUMPTION PATTERNS FOR FISH IN UGANDA
- 12:30 LUNCH**
- 2:00 James Diana**, Narayan Pandit, Madhav Shrestha  
DO HOUSEHOLD FISH PONDS IMPROVE FAMILY NUTRITION? A STUDY IN NEPAL
- 2:15 Sunila Rai**, Madhav Shrestha, James Diana, Hillary Egna  
INVOLVING WOMEN IN FIELD-TESTING OF A PERIPHYTON ENHANCED AQUACULTURE SYSTEM FOR NUTRITION SECURITY
- 2:30 Dilip Kumar Jha**, Narayan P. Pandit, Nabin B. Khanal, Ishori S. Mahato, Madhav K. Shrestha, James S. Diana, Hillary Egna  
A SCHOOL POND EDUCATION PROGRAM FOR CREATING AWARENESS ON AQUACULTURE IN NEPAL
- 2:45 Mst. Kaniz Fatema**, Md. Abdul Wahab, S.A.S.A. Tahmid, Amit Pandit, S.M. Masud Rana, Sagiya Sharmin Suchana, Tajmin Naher, Md. Faridujjaman, Shahroz Mahean Haque, Hillary Egna, Russell J. Borski  
ECONOMIC BENEFITS OF REDUCED FEED INPUTS AND POLYCULTURE OF TILAPIA WITH MAJOR INDIAN CARPS
- 3:00 Narriman Jiddawi**, Jiddawi Narriman  
SUSTAINABLE PEARL FARMING USING NEW TECHNIQUES OF SPAT COLLECTORS IN ZANZIBAR

# AQUATIC VETERINARY PRACTICE & AQUACULTURE PRODUCTION

Thursday, February 22 8:30 - 5:00 Concorde B

Chair: Dave Scarfe

- 8:15 Galit Sharon**, Ben Tamir, Shiri Meshner, Ashraf Ashhab  
FISH SKIN MICROBIOME AS A TOOL TOWARD UNDERSTANDING AND IMPROVING FISH WELFARE
- 8:30 Jessie M. Sanders**  
WATER QUALITY IN FRESHWATER FISH SYSTEMS
- 9:00 Galit Sharon**, Michal Ucko, Ben Tamir, Arik Diamant  
HIGH DIVERSITY OF *Myxobolus* spp. (MYXOZOA) IN AND BETWEEN JUVENILE *Mugil cephalus* INDIVIDUALS
- 9:30 Jessie M. Sanders**  
RECOGNIZING DISEASE IN FISH
- 10:00 BREAK**
- 11:00 Jessie M. Sanders**  
COMMON PARASITES OF FRESHWATER AQUACULTURE SPECIES
- 11:30 Jessie M. Sanders**  
METHODS TO MITIGATE DISEASE SPREAD THROUGH AQUACULTURE SYSTEMS
- 12:00 Jessie M. Sanders**  
VETERINARY CARE IN AQUACULTURE
- 12:30 LUNCH**
- 1:30 Christopher Good**, Steven Summerfelt, Travis May, Curtis Crouse, Lars Ebbesson, Sigurd Handeland, Sigurd Stefansson, Tom Nilsen, Bendik Terjesen, Frode Mathisen  
A 2X2 FACTORIAL STUDY ASSESSING PHOTOPERIOD AND FEEDING RATE ON THE OVERALL QUALITY OF ATLANTIC SALMON *Salmo salar* POST-SMOLTS RAISED IN LAND-BASED FRESHWATER SYSTEMS
- 1:45 Kathleen H. Hartman**  
COMMERCIAL AQUACULTURE HEALTH PROGRAM STANDARDS UPDATES
- 2:15 David Scarfe**, Timothy Miller-Morgan, Dušan Palic, Howard Wong, Gillian Taylor  
INTERNATIONAL EFFORTS TO PROVIDE A WELL-TRAINED AQUATIC VETERINARY WORKFORCE TO ASSIST AQUACULTURE INDUSTRIES AND OWNERS
- 3:15 Kathleen Hartman**, Lynn Creekmore, Lori Gustafson, Christa Speekmann, Katharine Starzel  
NATIONAL VETERINARY ACCREDITATION PROGRAM MODULE 13: AQUATIC ANIMAL HEALTH REGULATIONS AND HEALTH CERTIFICATION
- 4:00 Kathleen Hartman**, Lynn Creekmore, Lori Gustafson, Christa Speekmann, Katharine Starzel  
NATIONAL VETERINARY ACCREDITATION PROGRAM MODULE 28: SIGNIFICANT AND EMERGING VIRAL DISEASES OF CARP, KOI AND GOLDFISH

THURSDAY

# AQUATOOLS: SMART SITING AND ENVIRONMENTAL MANAGEMENT TOOLS FOR A GROWING AQUACULTURE INDUSTRY

Thursday, February 22 8:30 - 4:00 Burgundy

Chairs: James Morris, Robert Jones

- 8:30 Robert Jones**  
AQUACULTURE BY DESIGN: THE NATURE CONSERVANCY'S GLOBAL AQUACULTURE PROGRAM
- 8:45 James Morris**  
WAVE EXPOSURE MODELING TO INFORM AQUACULTURE SITING
- 9:00 Matt Parker**, Suzanne Bricker  
USE OF SPATIAL PLANNING AND ENVIRONMENTAL DATA FOR INCREASED COMMERCIAL SHELLFISH PRODUCTION AND PROFITABILITY; A REAL WORLD APPLICATION
- 9:15 Serena Lomonico**  
TESTING THE UTILITY OF UAVS TO MONITOR EELGRASS-AQUACULTURE INTERACTIONS
- 9:30 Trent Henry**  
SAN DIEGO BAY AQUACULTURE PLANNING AND OPPORTUNITY
- 9:45 Bill Dewey**  
INTEGRATED FARM MANAGEMENT AND ENVIRONMENTAL MONITORING USING ESRI APPS
- 10:00 BREAK**
- 11:00 Barry King**  
NEWDEPOMOD: AN UPDATED MODELING APPROACH FOR DEPOSITIONAL AQUACULTURE EFFLUENTS
- 11:15 Seth Theuerkauf**, James Morris, Robert Jones  
A GLOBAL SPATIAL ANALYSIS TO INFORM AQUACULTURE DEVELOPMENT TO RESTORE ECOSYSTEM HEALTH
- 11:30 Shina Wysocki**  
BALANCING FARMING AND FIGURES: A LOOK AT SECOND GENERATION FARMING, THE TECHNOLOGY WE USE, AND TRUSTING OUR INTUITION
- 11:45 Tyler Sclodnick**  
GIS AS A TOOL FOR OPEN OCEAN SITE SELECTION AND FEASIBILITY MODELS
- 12:00 Lisa Wickliffe**, Kenneth Riley, James Morris  
GULF AQUAMAPPER: INTERACTIVE GIS MAPPING TOOL VISUALIZES DATA TO HELP COASTAL MANAGERS AND INDUSTRY SITE OFFSHORE AQUACULTURE IN THE GULF OF MEXICO
- 12:15 Andrew Lacatell**, Tiffany Waters  
CHESAPEAKE BAY OYSTER AQUACULTURE: QUANTIFYING ECOSYSTEM SERVICES

THURSDAY

**12:30 LUNCH**

**2:00 Jennica L. Hawkins**, James A. Morris Jr.  
ASSESSING THE RISK OF ENVIRONMENTAL HARM FROM AQUACULTURE  
ESCAPES: A STATE OF SCIENCE ASSESSMENT FOR ATLANTIC SALMON *Salmo  
salar* IN PUGET SOUND

**2:15 Donna Lanzetta**  
SMART SITING FROM A BUSINESS PERSPECTIVE

**2:30 Doug Munroe**, Lisa Wickliffe, James Morris  
THE COASTAL AQUACULTURE PLANNING PORTAL: AN OVERVIEW OF TOOLS FOR  
PLANNING AND SITING AQUACULTURE IN THE COASTAL ZONE

**2:45 Q & A PANEL**

**ALTERNATIVE FEEDS**

Thursday, February 22 8:30 - 5:00 Concorde C

Chair: Meghan Kemski

**THURSDAY**

**8:30 Jenna Borberg**, Stephanie Ichien, Amanda Hyman, Cole Ensminger, Hillary Egna  
A REVIEW OF OVER A DECADE OF GLOBAL INVESTMENT IN AQUACULTURE FEED  
TECHNOLOGIES

**8:45 Erlinda S. Ganzon-Naret**  
EVALUATION OF DIFFERENT PROCESSING METHODS ON THE NUTRITIONAL  
COMPOSITION AND CERTAIN ANTI-NUTRITIONAL FACTORS IN PEAS *Pisum  
sativum*

**9:00 Megan Kemski**, MacDonald Wick, Konrad Dabrowski  
IMPROVING GROWTH PERFORMANCE IN YELLOW PERCH *Perca flavescens*  
JUVENILES FED A SOYBEAN MEAL BASED DIET AS THEIR FIRST FORMULATED  
FEED

**9:15 Patrick Blaufuss**, Gibson Gaylord, Wendy Sealey, Kenneth Overturf,  
Madison Powell  
GROWTH PERFORMANCE AND INTESTINAL HEALTH OF TWO DIFFERENT  
RAINBOW TROUT *Oncorhynchus mykiss* STRAINS FED A HIGH SOY DIET

**9:30 Gary Burr**, Brian Peterson, Alejandro Buentello, Stephanie Block  
GROWTH PERFORMANCE OF ATLANTIC SALMON *Salmo salar* SMOLTS FED DIETS  
CONTAINING HETEROTROPHIC ALGAL BIOMASS AS REPLACEMENT OF FISH OIL

**9:45 RuthEllen Klinger-Bowen**, Warren G. Dominy, Vernon Sato, Susan Dominy,  
Leonard Young, Amjad A. Ahmad, Alan Yamamoto, Robin Lee, Paul Silva, Paul Allas  
UTILIZATION OF FISH PROCESSING WASTE AS A SUPPLEMENTAL FEED FOR  
SUSTAINABLE AQUACULTURE PRACTICES

**10:00 BREAK**

**11:00 Simeon Ayoola**, Adekunle Idowu, Bola Bamiro  
GENOTOXICITY AND HEAMATOLOGICAL PROFILE OF *Clarias gariepinus*  
FINGERLINGS FED WITH WALNUT LEAVES AS A SUBSTITUTE FOR RICE BRAN TO  
DETERMINE GROWTH PERFORMANCE

- 11:15 Shimaa Salem**, Allen Davis, Tarek Mohamed, Ola Orma, Lay Nguyen  
THE ROLE OF INDISPENSABLE AND DISPENSABLE AMINO ACIDS  
SUPPLEMENTATION IN THE REDUCTION OF DIETARY CRUDE PROTEIN CONTENT  
IN CHANNEL CATFISH *Ictalurus punctatus* DIETS
- 11:30 Andrew Vickerson**  
ENTERRA FEED: SUSTAINABLE INSECT-BASED FEED INGREDIENTS IN  
AQUACULTURE DIETS
- 11:45 Pallab K. Sarker**, Anne R. Kapuscinski, Oliver F. Edelson, Devin S. Fitzgerald  
TOWARDS SUSTAINABLE FISH-FREE AQUAFEEDS: EVALUATING MICROALGAL  
CO-PRODUCT FOR REPLACEMENT OF FISH MEAL IN AQUACULTURE DIETS FOR  
NILE TILAPIA *Oreochromis niloticus*
- 12:00 Stephanie Velasquez**, Cyrell Ate, Gian Carlo Maliwat, Vikas Kumar, Janice Ragaza  
ENHANCED GROWTH AND FEED EFFICIENCY AND REDUCED SERUM GLUCOSE  
AND HDL-CHOLESTEROL IN NILE TILAPIA *Oreochromis niloticus* FED DIETS  
SUPPLEMENTED WITH *Sargassum fulvellum*
- 12:15 Samuel Kessler**, Vikas Kumar, Waldemar Rossi, Hab Andemichael  
APPLICABILITY OF WASTE-REARED *Hermetia illucens* AS AN INGREDIENT IN THE  
DIET OF NILE TILAPIA *Oreochromis niloticus*
- 12:30 LUNCH**
- 2:00 Clement de Cruz**, Martin Perez-Velazquez, Mayra González-Félix, Kequan Chen,  
María L. Juárez-Gómez, Delbert Gatlin III  
EVALUATION OF PARTIAL REPLACEMENT OF FISHMEAL AND FISH OIL BY  
MICROALGAE EXTRACTS IN DIETS FOR HYBRID STRIPED BASS *Morone chrysops*  
× *Morone saxatilis*
- 2:15 Fei Song**, Gen He, Guoyao Wu  
CATABOLISM OF L-4-HYDROXYPROLINE IN TISSUES OF HYBRID STRIPED BASS  
*Morone chrysops* × *M. saxatilis*
- 2:30 Fei Song**, Gen He, Guoyao Wu  
OXIDATION OF ENERGY SUBSTRATES IN ENTEROCYTES OF HYBRID STRIPED  
BASS *Morone chrysops* × *M. saxatilis*
- 2:45 Seonghun Won**, Ali Hamidoghli, Jin-hyeock Lee, Hyeonho Yun, Yongjik Lee,  
Sungwook Han, Sungchul C. Bai  
BACILLUS-FERMENTED VEGETABLE PROTEINS AS FISHMEAL REPLACERS IN  
JUVENILE WHITELEG SHRIMP *Litopaeneus vannamei*

THURSDAY

## AQUACULTURE WITHOUT FRONTIERS

Thursday, February 22 2:00 - 5:00 Chablis

Chairs: Sally Krueger, Dave Conley

- 2:00 Dave Conley**, Roy Palmer  
WHAT IS HAPPENING IN THE PACIFIC WITH AwF
- 2:15 Sally Krueger**, Roy Palmer  
EDUCATION ABOUT WOMEN/GENDER
- 2:30 Antonio Garza de Yta**, Roy Palmer  
WHAT IS HAPPENING IN LATIN AMERICA?
- 2:45 Samantha Farquhar**, Nisha Khanal, Madhav Shrestha, Ram Bhujel,  
Matthew Farthing  
SMALL-SCALE AQUACULTURE HELPS TO IMPROVE NUTRITION AND PROFIT OF  
RURAL COMMUNITY: A CASE STUDY FROM NEPAL
- 3:00 Albert Tacon**  
A FISH FOR ALL SEASONS: INCREASING AQUACULTURE'S CONTRIBUTION TO  
GLOBAL FOOD SUPPLY
- 3:15 Shahroz Mahean Haque**, Askiur Rahman, Joythi Saha, Tahmin Toma,  
Sadika Haque, Md. Abdul Wahab, Hillary Egna, Russell J. Borski  
GROWTH AND PRODUCTION PERFORMANCE OF AIR-BREATHING CLIMBING  
PERCH *Anabas testudeni* AND MAJOR CARPS IN POLY CULTURE
- 3:30 Khandaker Anisul Huq**, Shikder Saiful Islam, Wasim Sabbir, Joyanta Bir,  
Shahroz Mahean Haque, Russell Borski  
INTEGRATION OF MOLA *Amblypharyngodon mola* IN PRAWN-CARP GHER  
FARMING SYSTEMS TO INCREASE HOUSEHOLD NUTRITION AND EARNINGS FOR  
RURAL FARMERS IN SOUTHWEST BANGLADESH

THURSDAY

## SHRIMP PRODUCTION

Thursday, February 22 2:00 - 5:00 Bordeaux

Chair: Luke Roy



- 2:00 Luke A. Roy**, David Teichert-Coddington, Susan Laramore, Mark Godwin,  
Sunni Dahl, Jesse James, Gregory N. Whitis, Benjamin H. Beck,  
Craig A. Shoemaker  
COMMERCIAL EVALUATION OF A PROBIOTIC MIXTURE (SANOLIFE PRO-W)  
TO ENHANCE SURVIVAL, GROWTH, AND PRODUCTION OF THE PACIFIC WHITE  
SHRIMP *Litopenaeus vannamei* CULTURED IN INLAND PONDS OF WEST  
ALABAMA AND FLORIDA
- 2:15 D. Allen Davis**, Carter Ulman, Melanie Rhodes, Romi Novriadi,  
Anneleen Swanepoel  
THE USE OF AUTOMATED FEEDING SYSTEMS FOR THE PRODUCTION OF PACIFIC  
WHITE SHRIMP *Litopenaeus vannamei*: A RESEARCH PERSPECTIVE



- 2:45 Claude E. Boyd**, Aaron McNevin  
LAND USE EFFICIENCY IN SHRIMP AQUACULTURE
- 3:00 Humberto Villarreal**, José Naranjo, Alfredo Hernández, Luis D. Moreno, Mayra Vargas, José A. Hernández  
BIOECONOMIC ANALYSIS OF THE ANNUAL INTENSIVE PRODUCTION OF WHITE SHRIMP *Litopenaeus vannamei* IN A PHOTO-HETEROTROPHIC SYSTEM WITH MINIMAL SEAWATER-ADDITION IN THE SEMIARID REGION OF MEXICO
- 3:15 Gregory Whitis**, David Teichert-Coddington, Luke Roy  
THE PAST, PRESENT AND FUTURE OF ALABAMA'S INLAND SHRIMP INDUSTRY
- 3:30 Lisa Weaver**, Ronald Malone, Timmothy Pfeiffer  
USE OF PHA COLUMNS TO CONTROL NITRITE PEAKS DURING ACCLIMATION OF MARINE SHRIMP PRODUCTION
- 3:45 Anis Somani**  
OPTIMIZING SHRIMP PRODUCTION USING DEEPCHILL – AN ADVANCED COOLING TECHNOLOGY FOR SEAFOOD PRESERVATION
- 4:00 Robert Davis**, Aaron McNevin, Claude Boyd, Ravibabu Godumala, Avanigadda Mohan  
RESOURCE USE AND EFFICIENCY IN WHITELEG SHRIMP *Litopenaeus vannamei* PRODUCTION IN INDIA

## CATFISH AND CATFISH HYBRIDS

Thursday, February 22 2:00 - 5:15 Concorde A

Chair: Jimmy Avery

- 2:00 Kamal Gosh**, Rex Dunham, Terry Hanson, Nagaraj Chatakondi, David Drescher, Dalton Robinson, William Bugg, Nathan Backenstose, Fernando Kubitza, Carl Jeffers, Jesse Chappell, Charles Chen  
ANALYZING THE EFFECT OF PRODUCTION VARIABLES ON THE GROWTH VARIABILITY OF CHANNEL-BLUE HYBRID CATFISH
- 2:15 Herbert Quintero**, Anita Kelly, Luke Roy  
EVALUATION OF PRODUCTION SYSTEMS FOR RAISING CHANNEL CATFISH FINGERLINGS
- 2:30 Craig S. Tucker**  
SPLIT POND DESIGN AND MANAGEMENT FOR CATFISH FARMING
- 2:45 Les Torrans**, Brian Ott  
OXYGEN REQUIREMENTS OF SEPARATED HYBRID CATFISH ♀ *Ictalurus punctatus* × ♂ *I. furcatus* EGGS
- 3:00 Nagaraj Chatakondi**, Menghe Li  
EFFECT OF POST-SPAWNING BROODFISH DIET WITH HIGH LIPID CONTENT AND n-3 FATTY ACIDS ON REPRODUCTIVE PERFORMANCE OF CHANNEL CATFISH
- 3:15 Jimmy Avery**, Lester Khoo, Mark Peterman, Luke Roy, Larry Dorman  
AVOIDING RESIDUES IN U.S. FARM-RAISED CHANNEL CATFISH *Ictalurus punctatus*

- 3:30 Peter Bechtel**, Carissa Li, John Bland  
QUALITY CHARACTERISTICS OF PRECOOKED CATFISH FILLETS DURING 10 MONTHS OF FROZEN STORAGE
- 3:45 Mohammad Lokman Ali**, S. Mahean Haque, M.A. Wahab, Russell Borski  
EFFECT OF SALINITY ON THE SURVIVAL OF PANGASIOUS CATFISH *Pangasius hypophthalmus* IN SOUTHERN BANGLADESH
- 4:00 Noor Khan**, Summia Perveen  
GROWTH POTENTIAL, BODY COMPOSITION AND STRESS RESPONSES IN *Pangasius hypophthalmus* WHEN CULTURED WITH INDIAN AND CHINESE CARPS
- 4:15 Nathan Backenstose**, Karim Ane, Anthony Moss, Rex Dunham  
A HISTOLOGICAL AND TRANSCRIPTOME EVALUATION OF THE DEVELOPMENT OF RESPIRATORY STRUCTURES IN CATFISHES
- 4:30 Brian Ott**, Peter Allen, Les Torrans  
EFFECT OF HYPOXIA ON NEUROPEPTIDE GENE EXPRESSION IN CHANNEL CATFISH
- 4:45 Brian Bosworth**, Geoff Waldbieser  
BLUE CATFISH GERMPLASM DEVELOPMENT AT THE WARMWATER AQUACULTURE RESEARCH CENTER, USDA-ARS
- 5:00 Rex A. Dunham**, Ramjie Odin, Kamal Gosh, Max Bangs, Nathan Backenstose, Charles Chen, Terry Hanson, Jeffery Terhune, Nagaraj Chatakondi, Zachary Taylor  
GENETIC EFFECTS AND COMBINING ABILITY FOR OVERSIZED AND UNDERSIZED CHANNEL CATFISH *Ictalurus punctatus* FEMALE X BLUE CATFISH *I. furcatus* MALE HYBRID CATFISH

## CRUSTACEAN NUTRITION

Thursday, February 22 2:00 - 5:00 Champagne 1

Chair: Fabio Soller

- 2:00 Duy Hoa Nguyen**  
KEY FACTORS NEED TO BE CONSIDERED FOR SHRIMP DISEASE MANAGEMENT: FEED AND BEST FARM MANAGEMENT PRACTICES
- 2:15 Anneleen Swanepoel**, G.A. Harsha S. Chaturanga, Xuan Qiu, Melanie Rhodes, Romi Novriadi, João Reis, Carter Ullman, D. Allen Davis  
UTILIZATION OF CRYSTALLINE AMINO ACIDS BY PACIFIC WHITE SHRIMP *Litopenaeus vannamei*
- 2:30 Carl D. Webster**, Vaun C. Cummins, Steven D. Rawles, Kenneth R. Thompson, Alejandro Velasquez, Yuka Kobayashi, Janelle Hager  
EVALUATION OF BLACK SOLDIER FLY *Hermetia illucens* LARVAE MEAL AS PARTIAL OR TOTAL REPLACEMENT OF MARINE FISH MEAL IN PRACTICAL DIETS FOR PACIFIC WHITE SHRIMP *Litopenaeus vannamei*
- 2:45 Jingping Guo**, Xuan Qiu, Harsha Galkanda Arachchige, D. Allen Davis  
USING A HIGH-PROTEIN BREWER YEAST PRODUCT (DBY50) TO REPLACE FISHMEAL AND SOYBEANMEAL IN PRACTICAL DIETS FOR THE PACIFIC WHITE SHRIMP *Litopenaeus vannamei*

- 3:00 Jon Holt**  
EVALUATION OF WHOLE CORN GRAIN MEAL INCLUSION IN COMMERCIAL DIETS FOR PACIFIC SHRIMP *Litopenaeus vannamei*
- 3:15 Jon Holt**  
EVALUATION OF A COMMERCIALY-AVAILABLE SOY PROTEIN CONCENTRATE AS AN ALTERNATIVE INGREDIENT IN FEEDS FOR PACIFIC WHITE SHRIMP *Litopenaeus vannamei*
- 3:30 Harsha Sameera Chathuranga Galkanda Arachchige, Xuan Qiu, Anneleen Swanepoel, D. Allen Davis**  
EVALUATION OF DIFFERENT SOYBEAN SOURCES AS AN INGREDIENT IN PRACTICAL DIETS FOR PACIFIC WHITE SHRIMP *Litopenaeus vannamei*

## MARINE RECIRCULATING AQUACULTURE SYSTEMS

Thursday, February 22 2:00 - 5:00 Versailles 3

Chairs: KC Hosler, P. Eng

Sponsor: Aquacultural Engineering Society

- 2:00 Maddi Badiola, Oihane C. Basurko, Gorka Gabiña, Diego Mendiola**  
INTEGRATION OF ENERGY AUDITS INTO LIFE CYCLE ASSESSMENT METHODOLOGY TO IMPROVE ENVIRONMENTAL PERFORMANCE OF RECIRCULATING AQUACULTURE SYSTEMS
- 2:15 Paul Hundley, Reg Blaylock, Maddi Badiola**  
MARINE FINFISH HATCHERY DESIGN: DESIGN APPROACH AND RESULTING BEAD FILTER APPLICATIONS
- 2:30 Jaap van Rijn**  
NITRATE REMOVAL IN MARINE RECIRCULATING SYSTEMS
- 2:45 Matthew Louque, Ronald Malone, Timothy Pfeiffer, Lisa Weaver**  
USE OF FOAM FRACTIONATION IN COLLABORATION WITH A LOW-HEAD / LOW WATER LOSS POLYGEYSER BEAD FILTER TO ACHIEVE VISIBLY CLEAR WATER IN MARINE RECIRCULATING AQUACULTURE SYSTEMS
- 3:00 Keiko Saito, Brigit Quinn, Yonathan Zohar, Kevin Sowers**  
SOLID WASTE TREATMENT FOR SALTWATER RAS: ANAEROBIC DIGESTION AND BIOMETHANE PRODUCTION
- 3:15 Tim Pfeiffer**  
PRETREATMENT OF SALTWATER FOR MARINE AQUACULTURE AND RESEARCH FACILITIES

THURSDAY

## MACROALGAE

Thursday, February 22 2:00 - 5:00 Champagne 2

Chair: John Colt

- 2:00 Marc von Keitz**, Chad Haynes, Krishna Doraiswamy  
THE ARPA-E MARINER PROGRAM AND THE OPPORTUNITIES FOR OFF-SHORE CULTIVATION OF MACROALGAE (SEAWEED)
- 2:15 David Fredriksson**, Bill Beaver, Adam St. Gelais, Andrew Drach, Longhuan Zhu, Tobias Dewhurst, Barry Costa-Pierce  
HYDRODYNAMIC CHARACTERISTICS OF MACROALGAE GROWN ON A LONG-LINE AQUACULTURE SYSTEM FROM PHYSICAL MODEL TESTS
- 2:30 Chris Langdon**, Marcus Chatfield, Michael Morrissey, Chuck Toombs, Jason Ball, Ann Colonna, Sarah Masoni, David Stone  
CULTURE OF PACIFIC DULSE *Palmaria mollis* IN LAND-BASED SYSTEMS
- 2:45 John Colt**  
MACROALGAE GROWTH: ASSESSMENT OF EXISTING MODELS AND LIMITATIONS
- 3:00 Adam Chorazyczewski**, Paul Zimba, Padma Marwah, Xavier Mayali  
BACTERIAL-ALGAL PHYCOSPHERE INTERACTIONS: IS THERE AN EFFECT ON GROWTH AND LIPID PRODUCTION?
- 3:15 Alexander W. Geddie**  
THE EFFECT OF SALINITY ON THE TOTAL ACCUMULATION OF COPPER AND ZINC IN THE MACROALGAE *Ulva fasciata*
- 3:30 Scott Lindell**, Erin Fischell, Simona Augyte, David Bailey, Jean-Luc Jannink, Bren Smith, Gary Wikfors, Charles Yarish  
NEW TOOLS FOR SELECTIVELY IMPROVING STRAINS OF SUGAR KELP *Saccharina latissima* FOR FOOD AND FUEL
- 3:45 Jennifer Perry**, Sarah Brochu, Alison Brodt, Kilee Nile, Denise Skonberg  
DEVELOPMENT OF PRESERVATION PROCESSES FOR REFRIGERATION-STABLE SEA VEGETABLES: PHYSICOCHEMICAL AND MICROBIAL SAFETY ASPECTS
- 4:00 Balunkeswar Nayak**, Praveen Sappati, Peter van Walsum, John Belding  
OPPORTUNITIES AND CHALLENGES IN PROCESSING AND PRESERVATION OF SUGAR KELP
- 4:15 Jesse Traller**, Frederic Barrows, Aga Pinowska, Rodney Corpuz, Dave Hazlebeck  
DEVELOPMENT OF A LOW-COST NOVEL ALGAE BASED AQUACULTURE FEED PRODUCT
- 4:30 Jacqueline Mitchell**, John Scarpa, Joe Fox, Nathan Huysman, Ronald Pate, Mark Zivojnovich, Steven Calahan, Anthony Siccardi III  
OPTIMIZATION OF ALGAL TURF SCRUBBERS FOR LARGE-SCALE SUPER-INTENSIVE AQUACULTURE
- 4:45 Gregory Rorrer**, Jason Polzin  
SELECTIVE PRODUCTION OF C10 HYDROCARBONS BY MICROPLANTLET SUSPENSION CULTURES OF THE MACROPHYTIC MARINE RED ALGA *Ochtodes secundiramea*

THURSDAY

# COMMERCIAL AQUACULTURE HEALTH PROGRAM STANDARDS (CAHPS)

Thursday, February 22 2:00 - 5:00 Champagne 3

Chair: Kathleen Hartman

- 2:00 Kathleen Hartman**  
CAHPS – FINDING AND FITTING THE PIECES OF THE PUZZLE
- 2:30 Craig Watson**  
COMPREHENSIVE AQUACULTURE VETERINARY MEDICINE TRAINING FOR  
VETERINARIANS IN RURAL AMERICA
- 2:45 Randy MacMillan**  
CAHPS FOR ZONING
- 3:15 Kathleen Hartman**  
CAHPS – PROOF OF CONCEPT PROJECTS
- 3:45 Jonathan van Senten**  
IS THERE AN ECONOMIC INCENTIVE FOR PARTICIPATION IN A UNIFORM HEALTH  
STANDARD FOR AQUACULTURE FARMS?

THURSDAY

## ORGANIC AQUACULTURE WORKSHOP: NEW USDA PROPOSED STANDARDS

Thursday, February 22 2:00 - 5:00 Versailles 2

Chair: George Lockwood

Panel discussion on the proposed final administrative rule to implement a U.S. Department of Agriculture organic label for U.S. aquaculture. Topics will include rule components, the intent and meaning, and how to comment during the public comment period.

- 2:00 George Lockwood**  
Panel discussion on the proposed final administrative rule to implement a U.S. Department of Agriculture organic label for U.S. aquaculture. Topics will include rule components, the intent and meaning, and how to comment during the public comment period.

# NOTES

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