TUESDAY, February 23

PLENARY
Tuesday, February 23  8:30 - 10:00  Concorde B
Chair: Michael Masser

8:30  Association Awards

9:20  James Anderson
THE FUTURE OF AQUACULTURE AND ITS ROLE IN THE GLOBAL FOOD SYSTEM

PERCIDS AQUACULTURE
Tuesday, February 23  11:00 - 12:30  Concorde B
Chairs: Brian Sheppard, Gregory Fischer, J. Alan Johnson

11:00  Gregory Fischer
INTENSIVE PRODUCTION OF WALLEYE *Sander vitreus* AND HYBRID WALLEYE IN A RECYCLE WATER SYSTEM UTILIZING A DOMESTIC BROODSTOCK

11:15  Allyn Spear, Timothy Paul, Douglas Leaman, Mathilakath Vijayan, Carol Stepien, Brian Shepherd
THE INFLUENCE OF SEX AND ENVIRONMENTAL TEMPERATURE ON THE ACUTE STRESS RESPONSE OF JUVENILE YELLOW PERCH *Perca flavescens*

11:30  Carol Stepien, Eva Kramer, Allyn Spear, Brian Shepherd, Amanda Haponski, Oswaldo Sepulveda-Villet
COMPARATIVE POPULATION GENETIC STRUCTURE AND DIVERSITY OF YELLOW PERCH AND WALLEYE: BROAD- AND FINE-SCALE PATTERNS ACROSS NORTH AMERICA

11:45  Oswaldo Sepulveda Villet, Fred Binkowski, Brian Shepherd, Allyn Spear
THE EFFECT OF GENETIC IMPROVEMENT ON YELLOW PERCH: CHANGES IN GROWTH RATES, SIZE AT HARVEST, AND OVERALL GENETIC DIVERSITY
12:00 J. Alan Johnson
FEED RATE PREDICTION FOR LARVAE TO ADVANCED FINGERLING WALLEYE
*Sander vitreus*

12:15 Martin Vestergaard
EXPERIENCES AND CHALLENGES FARMING PIKEPERCH

**STUDENT SPOTLIGHT**
Tuesday, February 23  11:00 - 12:00  Champagne 1
Chair: Chris Green

11:00 Chris Green
THREE STUDENTS WITH THE TOP ABSTRACTS FROM THE THREE GROUPS (NSA, WAS, FCS) WILL BE PRESENTING AN ABBREVIATED VERSION OF THEIR FULL PRESENTATION

James Schwartz
EVALUATING EFFECTS OF FISH OIL REPLACEMENT WITH ALGAL OIL
*Schizochytrium sp.* IN THE DIET OF *Oncorhynchus mykiss*

Timothy Bruce
IMMUNOMODULATION IN RAINBOW TROUT *Oncorhynchus mykiss* FED BIOPROCESSED SOY DIETS AND CHALLENGED WITH *Flavobacterium psychrophilum*

Brunno da Silva Cerozi
PHOSPHORUS DYNAMICS MODELING AND MASS BALANCE IN AQUAPONICS

Ramjie Odin
PRODUCTION OF CHANNEL CATFISH *Ictalurus punctatus* ♀ × BLUE CATFISH *Ictalurus furcatus* ♂ HYBRID PROGENY USING XENOGENSES

Chuck Roe
IMPROVING SOY BASED FEED FORMULATIONS FOR THE FLORIDA POMPANO *Trachinotus carolinus* USING NOVEL SOY PROTEIN CONCENTRATE

Sergio Castillo
DIETARY VALINE REQUIREMENT OF JUVENILE RED DRUM *Sciaenops ocellatus* AND THE EFFECT OF EXCESS BRANCHED-CHAIN AMINO ACIDS ON GROWTH PERFORMANCE

Kelli Barry
REEVALUATING THE ESSENTIAL FATTY ACID REQUIREMENTS OF RAINBOW TROUT *Oncorhynchus mykiss*

Alexis Bergman
CULTIVATION OF WHITE WORMS *Enchytraeus albidus* USING LOW- OR NO-COST FEED RESOURCES

Melissa Pierce
BIVALVES MAINTAIN A CORE GUT MICROBIOME: SEASONAL TRENDS AND SPECIES VARIATION

Hillary Lane Glandon
THE INTERACTIVE EFFECTS OF ACIDIFICATION AND WARMING ON THE GROWTH OF JUVENILE BLUE CRAB *Callinectes sapidus* FROM THE PATUXENT RIVER, CHESAPEAKE BAY
CRUSTACEANS
Tuesday, February 23  11:00 - 12:30  Chablis
Chair: Brad Stevens

11:00  Pedro Cruz, Humberto Villarreal, José Naranjo, Mayra Vargas
EVALUATION OF GENETIC VARIABILITY OF THREE LINES OF Cherax quadricarinatus CULTURED IN MEXICO

11:15  Barclay T. Pace, Wei Xu, Christopher C. Green
ANTIOXIDANT ACTIVITY AND IMMUNOLOGICAL GENE EXPRESSION INDUCED BY WHITE SPOT SYNDROME VIRUS (WSSV) INFECTION IN Procambarus clarkii

11:30  Benjamin A. Bowman, Kristy M. Allen, Kenneth R. Thompson, Siddhartha Dasgupta, Vikas Kumar
REPLACEMENT OF FISHMEAL WITH ALTERNATIVE PROTEIN SOURCES FOR AUSTRALIAN RED CLAW CRAYFISH Cherax quadricarinatus

11:45  Hillary Lane Glandon, Kennedy Paynter, Thomas Miller
THE INTERACTIVE EFFECTS OF ACIDIFICATION AND WARMING ON THE GROWTH OF JUVENILE BLUE CRAB Callinectes sapidus FROM THE PATUXENT RIVER, CHESAPEAKE BAY

12:00  J. Sook Chung, I. S. Ahn
ONTOGENIC EXPRESSION OF CRUSTACEAN FEMALE SEX HORMONE (CFSH) AND ITS FUNCTIONAL ROLE IN DEVELOPING FEMALE SPECIFIC-SEX CHARACTERISTICS IN THE BLUE CRAB Callinectes sapidus

12:15  Leah Maurer, J. Sook Chung
INFLUENCE OF PREY DENSITY AND DIETARY SUPPLEMENTATION ON THE LARVAL DEVELOPMENT OF THE BLUE CRAB Callinectes sapidus

VIBRIOSIS IN SHELLFISH AQUACULTURE
Tuesday, February 23  11:00 - 12:00  Vendome B
Chair: Claudia Hase

11:00  Gary P. Richards
HATCHERY MORTALITIES OF LARVAL OYSTERS CAUSED BY Vibrio tubiashii AND Vibrio coralliilyticus

11:15  Saebom Sohn, Meagan Hamblin, Lauren Gregg, David Rowley, David Nelson, Roxanna Smolowitz, Standish K. Allen, Jr., Marta Gómez-Chiarri
DEVELOPMENT AND OPTIMIZATION OF PROBIOTICS FOR BIVALVE SHELLFISH HATCHERIES

11:30  Michael F. Marusich, Carla B. Schubiger, Claudia C. Häse
A RAPID (1 HOUR), SIMPLE TEST FOR THE PACIFIC OYSTER PATHOGEN Vibrio coralliilyticus BASED ON DETECTION OF THE SHELLFISH VIBRIOSIS TOXIN VcpA WITH A SENSITIVE LATERAL FLOW “DIPSTICK” IMMUNOASSAY

11:45  Sarah Cumming, Dan McCall, James Smith, Nicola Hawes, Rodney Roberts
ROLE OF OPPORTUNISTIC Vibrio SPECIES IN LARVAL REARING OF THE MUSSEL Perna canaliculus
COORDINATED FEDERAL PERMITTING PROCESS
FOR AQUACULTURE IN THE GULF EEZ
Tuesday, February 23   11:00 - 12:30   Concorde A
Chair: Jess Beck-Stimpert

11:00 Jenny Molloy
OVERVIEW OF THE COORDINATED FEDERAL PERMIT PROCESS FOR AQUACULTURE IN FEDERAL WATERS OF THE GULF OF MEXICO

11:15 Jess Beck-Stimpert
NMFS GULF AQUACULTURE PERMIT (GAP) PROGRAM FOR FEDERAL WATERS

11:30 Jenny Molloy
EPA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITTING PROCESS FOR AQUACULTURE IN FEDERAL WATERS

11:45 Desiree Morningstar, Martin Mayer
ARMY CORPS SECTION 10 PERMITTING PROCESS FOR AQUACULTURE IN FEDERAL WATERS

12:00 QUESTION AND ANSWER SESSION

GENERAL CONTRIBUTED
Tuesday, February 23   11:00 - 12:30   Burgundy
Chair: TBA

11:00 Thirugnanasambandam Ramanathan
BIOPROSPECTING OF EAST COAST OF INDIAN MANGROVES

11:15 Gabriela Gaxiola, Carlos Maldonado, Gerogina Vargas, Adriana Paredes, Ana Castillo, Alvaro Barreto, Miroslava Zepeda
CHYTIN AND CORNSTARCH EFFECT ON GROWTH AND SURVIVAL OF WILD JUVENILES OF RED GROUPER Epinephelus morio

11:30 Christina M. Belfranin, Jorge A. Suarez, Delbert M. Gatlin, Rick T. Barrows, Daniel D. Benetti
GROWTH PERFORMANCE AND FEED EFFICIENCY OF ADULT FLORIDA POMPANO Trachinotus carolinus FED SEMI-PURIFIED DIETS WITH GRADED LEVELS OF METHIONINE

11:45 Lisa Dyson
HIGH PROTEIN AQUACULTURE FEED FROM CO2
TUESDAY

AERATORS AND POND AERATION
Tuesday, February 23 11:00 - 12:30 Loire
Chair: Yoram Avnimelech

11:00 Claude E. Boyd
A HISTORY OF AQUACULTURE POND AERATION RESEARCH

11:15 Eugene Torrans
DISSOLVED OXYGEN MANAGEMENT IN CATFISH PONDS USING ELECTRIC PADDLEWHEEL AERATORS: NEW APPROACHES WITH OLD TECHNOLOGY

11:30 Trevor P. Luna, Jeonghwan Park, David Heikes
THE EFFECT OF SCREEN SIZES AND CULVERT WATER RETURN AREA ON PUMPING PERFORMANCE OF A PADDLEWHEEL WATER CIRCULATOR IN A SPLIT-POND TEST SYSTEM

11:45 Yoram Avnimelech
THE NEED TO DEVELOP BETTER POND AERATING SYSTEMS

12:00 DISCUSSION

CULTURE OF YELLOW PERCH AND EUROPEAN PERCH: PRESENT “STATE-OF-THE-ART”
Tuesday, February 23 11:00 - 5:00 Concorde B
Chair: Konrad Dabrowski

2:15 Tomas Policar, Miroslav Blecha, Petr Svacina, Jiri Krištan
CURRENT EURASIAN PERCH Perca fluviatilis L. PRODUCTION, CULTURE, TECHNOLOGY AND PROGRESS IN EUROPE

2:30 John Grayson, Jacques Rinchard, Konrad Dabrowski
COMPARING LIVE FOOD PUFA ENRICHMENT WITH AND WITHOUT TOCOPHEROL SUPPLEMENTATION FOR THE INTENSIVE CULTURE OF YELLOW PERCH Perca flavescens LARVAE

2:45 Megan Kemski, Benjamin Schott, Macdonald Wick, Konrad Dabrowski
EFFECT OF NUTRITIONAL PROGRAMMING ON REPRODUCTIVE PERFORMANCE AND QUALITY OF PROGENIES IN YELLOW PERCH Perca flavescens

3:00 Mackenzie Miller, Konrad Dabrowski, Megan Kemski, John Grayson, Kristen Towne
IMPROVING THE EFFECTIVENESS OF SIMPLE CRYOPRESERVATION TECHNIQUES ON SPERM OF YELLOW PERCH Perca flavescens

3:15 Kristen Towne, Konrad Dabrowski
SEX REVERSAL OF YELLOW PERCH Perca flavescens EXPOSED TO 17α-METHYLTESTOSTERONE OR ESTRADIOL BY IMMERSION OR ORALLY AND GROWTH STUDY FOLLOWING EXPOSURE

3:30 Mohammad Alam, Mackenzie Miller, Seth Collingwood, Jarrod Pollock, Kaitlyn Wagner, Konrad Dabrowski
HYPOXIC THRESHOLD FOR YELLOW PERCH Perca flavescens EMBRYONIC DEVELOPMENT

3:45 Konrad Dabrowski, Mackenzie Miller
HYBRIDIZATION OF YELLOW PERCH FEMALE WITH OTHER PERCIDS
2:00  Mark Francis
INTRODUCTION

Marc Tye
ZHA UPDATE

Stewardship Award

Katy Murray
ZIRC UPDATE

Hugh Hammer
GADSDEN UPDATE

ZHA SPONSORED SESSION
2:45  Dante D’India
IMPROVED LONG-TERM IMAGING OF EMBRYOS WITH GENETICALLY ENCODED A-BUNGAROTOXIN

3:05  David Marancik
OPPORTUNISTIC BACTERIAL PATHOGENS OF ZEBRAFISH AND IMPLICATIONS FOR EVIDENCE-BASED DISEASE MANAGEMENT

3:25  Claire Allen
HUSBANDRY ADVANCES USING KEY PRINCIPLES OF ANIMAL WELFARE

3:45  Dan Castranova
USING OVAPRIM TO ENHANCE REPRODUCTIVE PERFORMANCE IN LABORATORY REARED ZEBRAFISH

4:05  Jim Burris
IS THERE A “GOLDEN PERIOD” FOLLOWING UNEXPECTED SHUTDOWN OF A ZEBRAFISH RECIRCULATING AQUACULTURE SYSTEM?

4:25  Stephen Canter
AN EVALUATION OF FEEDS USED IN ROTIFER CULTURES AND EFFECTS ON ZEBRAFISH HUSBANDRY AT WUSTL ZEBRAFISH FACILITY

PHYSIOLOGICAL INSIGHTS TOWARDS IMPROVING FISH CULTURE IV
Tuesday, February 23  11:00 - 5:00  Versailles 2
Chairs: Kurt Gamperl, Matt Rise, Brian Small, Greg Weber

Development and Reproduction
Moderator: Greg Weber

11:00  Yonathan Zohar, Olivia Spicer, Miranda Marvel, Ten-Tsao Wong, Nilli Zmora
FISH REPRODUCTION – EXACTLY WHO IS IN CONTROL?
11:30  Benjamin Reading, Andrew Baltzegar, Justin Schilling, Naoshi Hiramatsu
        MULTIPLE VITELLOGENINS AND THEIR RECEPTORS IN FISHES

11:45  Jian Wang, Jianbo Yao
        ASSEMBLY AND CHARACTERIZATION OF THE RAINBOW TROUT EGG
        TRANSCRIPTOME

12:00  Hao Ma, Gregory M. Weber, Guangtu Gao, Hairong Wei, Jianbo Yao
        IDENTIFICATION OF MITOCHONDRIAL GENOME-ENCODED SMALL RNAs RELATED
        TO EGG QUALITY DETERIORATION CAUSED BY POST-OVULATORY AGING IN
        RAINBOW TROUT

12:15  Gregory M. Weber, Hao Ma, Carlos Jose Hoff de Souza, Timothy D. Leeds,
        Guangtu Gao
        CHANGES IN GENE EXPRESSION DURING FOLLICLE MATURATION IN RAINBOW
        TROUT Oncorhynchus mykiss

12:30  LUNCH

1:30   Prasanthi Koganti, Jian Wang, Beth Cleveland, Gregory M. Weber, Jianbo Yao
        NON-CpG METHYLATION IN THE FIRST EXON OF THE MYOGENIC
        TRANSCRIPTION FACTOR MyoD IN RAINBOW TROUT MUSCLE IS AFFECTED BY
        ESTROGEN

2:15   Adam Luckenbach, William Fairgrieve, Edward Hayman
        MONOSEX PRODUCTION AND INSIGHT INTO MECHANISMS OF SEX
        DETERMINATION AND DIFFERENTIATION IN SABLEFISH Anoplopoma fimbria

2:30   Brian Peterson, Nagaraj Chatakondi
        EFFECTS OF VITAMIN C ON PERCENT NEURULATION, HATCH, GROWTH, AND
        SURVIVAL OF HYBRID CATFISH CHALLENGED WITH VIRULENT Edwardsiella
        ictaluri

2:45   Ramjie Y. Odin, Khoi Vo, Ahmed Alsaqufi, Dayan Perera, Shang Mei,
        Baofeng Su, Sheng Dong, Guyu Qin, Ahmed Elaswad, Karim Khalil, Elizabeth Lipke,
        Eric Peatman, Rex A. Dunham
        PRODUCTION OF CHANNEL CATFISH Ictalurus punctatus 9 × BLUE CATFISH
        Ictalurus furcatus o HYBRID PROGENY USING XENOGENSES

3:00   Nagaraj Chatakondi, Geoff Waldbieser
        POTENCY OF BLUE CATFISH Ictalurus furcatus (INDIVIDUAL VS. POOLED)
        SPERM TO FERTILIZE STRIPPED CHANNEL CATFISH I. punctatus EGGS ON THE
        PRODUCTION AND PERFORMANCE OF PROGENY

3:15   Maureen Ritter, Jorn Ulheim, Jan Sunde
        A NEW METHOD FOR MAXIMIZING THE USE OF SPERM CELLS FROM GONADS –
        A MULTI-SPECIES APPROACH

Stress, Environmental Challenges and Fish Welfare
Moderator: Kurt Gamperl

3:30   Erik Sandblom
        STUNNING OF ARCTIC CHAR Salvelinus alpinus WITH CARBON DIOXIDE AND
        ELECTRIC FIELD EXPOSURE: PHYSIOLOGICAL INSIGHTS ON MECHANISMS OF
        LETHALITY AND WELFARE IMPLICATIONS
4:00 **Albin Gräns, Erik Sandblom, Henrik Sundh, Charlotte Berg, Kristina Sundell, Michael Axelsson**

**BIOTELEMETRY AS A TOOL TO IMPROVE FISH WELFARE IN AQUACULTURE**

4:15 **Michael Ciaramella, M. Wes Schilling, Peter Allen**

**THE EFFECTS OF ENVIRONMENTAL AND HANDLING STRESS ON THE PHYSIOLOGY AND MEAT QUALITY OF CHANNEL CATFISH**

4:30 **Morris Villarroel, Ruben Bermejo-Poza, Fernando Torrent, Elisabeth González de Chavarri, Concepción Pérez, Jesús de la Fuente**

**WELFARE AND FLESH QUALITY OF SPANISH RAINBOW TROUT WHEN ELECTRICALLY STUNNED**

4:45 **Henrik Sundh, Albin Gräns, Jeroen Brijs, Erik Sandblom, Michael Axelsson, Torbjörn Lundh, Anders Kiessling, Bo Algers, Charlotte Berg, Kristina Sundell**

**PHYSIOLOGICAL MECHANISMS BEHIND STRESS INDUCED INTESTINAL PRIMARY BARRIER DYSFUNCTION IN RAINBOW TROUT *Oncorhynchus mykiss***

**ALGAE FOR AQUAFEED**

Tuesday, February 23    11:00 - 5:00    Champagne 3    Chairs: Patricia Abelin, John Bennemann

11:00 **John Benemann**

**ALGAE CULTURE FOR AQUAFEEDS**

11:15 **Matthew Carr**

**ALGAE AS AQUAFEED: NEW DEVELOPMENTS IN THE U.S.**

11:30 **Vítor Verdelho, Joana Lapa, Tiago Guerra, Pilar Ramirez**

**ALGAE FOR AQUAFEEDS – EUROPEAN ACTIVITIES AND BEYOND**

12:00 **Walter Rakitsky**

**PROTEIN AND LIPID RICH MICROALGAE INGREDIENTS PRODUCED BY HETEROTROPHIC FERMENTATION OF PLANT DERIVED INPUTS FOR USE IN AQUACULTURE FEEDS**

12:30 **LUNCH**

2:00 **Stefan Kraan**

**USING MACROALGAE AS FEED INGREDIENTS IN AQUAFEED, IMPROVING HEALTH WHILE CLOSING THE NUTRIENT CYCLE!**

2:30 **Keith Filer**

**MICROALGAE FROM FERMENTATIONS FOR FISH OIL REPLACEMENT**

3:00 **Amha Belay**

**NUTRITIONAL AND THERAPEUTIC POTENTIAL OF SPIRULINA *Arthrospira* AS AN AQUACULTURE FEED**

3:15 **Len Smith**

**NATURAL ALGAL ASTAXANTHIN PRODUCTS FOR HIGH-END AQUACULTURE**

3:30 **Craig Behnke, Rebecca Ryan**

**PRODUCTION OF AQUACULTURE FEED INGREDIENTS USING OPEN POND ALGAE CULTIVATION**
3:45 Nuno Coelho, Edgar Santos  
MICROALGAE AQUACULTURE FEED PRODUCTION AT A4F IN PORTUGAL

4:00 William van der Riet, Viktor Chepurnov  
CONVERTING ALGAE ART TO ALGAE TECHNOLOGY IN HATCHERY APPLICATIONS

4:15 Martin Sabarsky  
CELLANA’S ALDUO™ PROCESS: THE FARMING OF ALGAE-BASED AQUAFEEDS

4:30 Tim Reed  
MICROALGAE APPLICATIONS AND POTENTIAL IN HATCHERIES

4:45 FORUM FOR Q&A AND DISCUSSION

AQUACULTURE EXTENSION AND EDUCATION:  
ADVANCING, IMPROVING, AND DOING  
Tuesday, February 23     11:00 - 5:00     Versailles 3  
Chairs: Anoushka Concepcion, Anne Langston

11:00 Gef Flimlin, Margaret Fogarty  
INVESTING IN NEW MARKET PARADIGMS FOR SHELLFISH FARMERS

11:30 Ganesh Kumar, Carole Engle  
ADOPTION OF TECHNOLOGIES: WHAT INFLUENCES FARMERS’ DECISIONS TO CHANGE FARMING PRACTICES?

11:45 David Cline  
SIMPLE TECHNIQUES TO ENHANCE YOUR PRESENTATION USING POWER POINT

12:00 Kenneth J. Semmens  
BUILDING AN AQUACULTURE INDUSTRY: A PERSPECTIVE ON CRITICAL COMPONENTS

12:15 Emma Wiermaa, Greg Fischer, Chris Hartleb  
EDUCATING THE FUTURE AND PRESENT WORKFORCE THROUGH INTERACTIVE, HANDS-ON APPLICATIONS OF AQUACULTURE

12:30 LUNCH

2:00 Cortney Ohs, Carlos Martinez, LeRoy Creswell  
SUCCESSFUL IMPLEMENTATION OF THE TEACH AQUACULTURE CURRICULUM

2:15 Carlos V. Martinez  
TEACH AQUACULTURE: SUCCESS STORIES RELATED TO THE IMPLEMENTATION OF THE “TEACH AQUACULTURE CURRICULUM” IN BOTH MIDDLE AND HIGH SCHOOLS IN THE STATE OF FLORIDA AS WELL AS MIDDLE SCHOOL OUTREACH

2:30 Laura Wilson, Sarah Sparks, Kimberly Caron  
DEVELOPMENT OF A “GRAB-AND-GO” 4-H SCIENCE AQUACULTURE TOOLKIT FOR USE BY DIFFERENT FACILITATORS

2:45 Michael Shane, Mark Drawbridge  
SEABASS IN THE CLASSROOM: FISH AND STUDENTS GET SchooLedm IN AQUACULTURE
3:00 Nicole Kirchhoff, Jean Ingelmo
EXPANSION OF PINFISH MARKET THROUGH TECHNOLOGY TRANSFER TO BAIT-
AND-TACKLE STORES

3:15 Rosie Abalos, Shella Parreno, Emmanuel Federico Capinpin Jr., Geronimo Rosario,
Raul Dela Pena
THE IMPLEMENTATION OF THE PHILIPPINE NATIONAL AQUASILVICULTURE
PROGRAM: PANGASINAN STATE UNIVERSITY EXPERIENCE

3:30 Bernadette Fregene, Emmanuel Ajani, Bamidele Omitoyin, Latifat Busari
GENDER DIMENSIONS OF ADOPTING CLIMATE-SMART INTEGRATED
AQUACULTURE IN NIGERIA

3:45 Ramjie Y. Odin, Cesar Galvan
RESTORING LIVELIHOODS IN CONFLICT-AFFECTED AREAS IN MAGUINDANAO
PROVINCE OF THE AUTONOMOUS REGION IN MUSLIM MINDANAO IN THE
PHILIPPINES THROUGH AQUACULTURE

4:00 Joseph R. Sullivan
VOLUNTEER OPPORTUNITIES WITH SMALL SCALE AQUACULTURE AND
FISHERIES IN THE UNITED STATES PEACE CORPS AND THE U.S. AGENCY FOR
INTERNATIONAL DEVELOPMENT’S JOHN OGINOWSKI AND DOUG BEREUTER
FARMER-TO-FARMER PROGRAM

4:15 Khalid Salie, Wendy Engel
IMPACT OF KNOWLEDGE TRANSFER MEDIA ON FISH FARMERS IN THREE
PROVINCES OF SOUTH AFRICA

AQUAPONICS
Tuesday, February 23     11:00 - 5:00     Champagne 2
Chair: Huy Tran

11:00 Morris Villarroel, Benz Kotzen, Agnes Joly, Bettina Konig, Junge Ranka,
Ignacio Plaza, Tamas Komives, András Bittsánszky
SURVEY OF AQUAPONICS IN EUROPE

11:15 Paul Brown
AQUAPONICS: ADVANCED FOOD PRODUCTION SYSTEMS, BUT ARE THEY
SUSTAINABLE AND IS SUSTAINABILITY ENOUGH?

11:30 Adam Cohen
FROM GREENHOUSE MANAGEMENT TO FULL SPECTRUM SUSTAINABILITY: THE
GROWTH OF THE AGRICULTURE PROGRAM AT SANTA FE COMMUNITY COLLEGE

11:45 James M. Ebeling, Michael B. Timmons, Michael Malone
A “FAMILY” OF ENGINEERING DESIGNS FOR HOME/SCHOOL, SMALL FARM/
URBAN SETTINGS AND SMALL/LARGE SCALE COMMERCIAL AQUAPONIC
SYSTEMS

12:00 Carlos León
AQUAPONICS IN SMALL SCALE FOR RURAL AND EDUCATION

12:15 J.L. Giovanna Hesley, James M. Ebeling
THE DESIGN, CONSTRUCTION AND MANAGEMENT OF FIVE SCHOOL BASED
AQUAPONIC SYSTEMS IN TUCSON, ARIZONA
12:30 LUNCH

2:00 Wenresti Gallardo, Mohammed Al Mahfudhi, Mohammed Al Siyabi
RECYCLING VERSUS NON-RECYCLING AQUAPONIC SYSTEM: WATER QUALITY AND GROWTH AND SURVIVAL OF TILAPIA AND LETTUCE

2:15 George Brooks Jr.
THE FEASIBILITY OF AQUAPONIC DEVELOPMENT IN PHOENIX, ARIZONA

2:30 Carlos León
AQUAPONICS IN HYBRID INTEGRATED SYSTEM

2:45 Kevan Main, Suzanne Boxman, Michael Nystrom, Sarina Ergas, Maya Trotz
EVALUATING THE PERFORMANCE OF A MARINE AQUAPONIC SYSTEM PRODUCING RED DRUM Sciaenops ocellatus AND TWO SPECIES OF SALTWATER VEGETABLES

3:00 Carlos León
MULTITROPHIC AQUAPONICS USING SHRIMP, TILAPIA AND HALOPHYTES IN A LOW SALINITY SYSTEM

3:15 Huy Tran
APPLING COUPLED AND DE-COUPLED AQUAPONICS TO BETTER UTILIZE RAS WATER

3:30 Ricardo Radulovich, Rebeca Mata, María José Rodríguez
GROWING HALOPHYTES DIRECTLY AT SEA

3:45 Allen Pattillo, James Wamboldt
EFFECTS OF COMPOSTING WORM SPECIES AND ABUNDANCE ON LETTUCE AND BARRAMUNDI Lates calcarifer PRODUCTION IN AN AQUAPONICS SYSTEM

4:15 Sarah K. Taber
MITIGATING FOOD SAFETY HAZARDS IN AQUAPONICS

4:30 Brad Todd
ALTERNATIVE HEATING OPTIONS FOR COMMERCIAL AQUAPONICS

4:45 Brad Todd
CROP CHOICES FOR AQUAPONIC PROFITABILITY

**SHRIMP HEALTH AND DISEASE**
Tuesday, February 23   2:00 - 5:00   Champagne 1
Chairs: Jeffrey Lotz, Reginald Blaylock

2:00 Edgar Amar, Rolando Gapasin, Joseph Faisan, Jr.
FIELD EFFICACY EVALUATION OF A FORMALIN-INACTIVATED WHITE SPOT SYNDROME VIRUS (WSSV) VACCINE FOR THE PREVENTIVE MANAGEMENT OF WSSV INFECTION IN BRACKISH WATER SHRIMP PONDS

2:15 Alvaro Ortiz, Pilar Honrubia, João Dantas Lima, Juan J. Mallo
EFFICACY OF PROBIOTIC Bacillus amyloliquefaciens CECT 5940 AGAINST EMS/AHPND Vibrio parahaemolyticus
2:30 Jeffrey M. Lotz
MODELING PATHOGEN DYNAMICS FOR DISEASE CONTROL IN MARINE AQUACULTURE

2:45 Jeffrey Lotz, Muhammad Muhammad, Stephen Curran, Reginald Blaylock
RESERVOIRS OF WHITE SPOT SYNDROME VIRUS IN THE NORTHERN GULF OF MEXICO

3:00 Joseph Leopoldo Laranja, Peter De Schryver, Edgar Amar, May Joy Geaga, Yufeng Niu, Peter Bossier
PHB ACCUMULATING Bacillus sp. JL47 PROTECTS Penaeus monodon POSTLARVAE AGAINST PATHOGENIC Vibrio campbellii BY ENHANCING THE INNATE IMMUNE RESPONSE

3:15 Jee Eun Han, Kathy F.J. Tang, Donald V. Lightner
RECENT STUDIES ON SHRIMP MICROSPORIDIAN INFECTION: ENTEROCYTOZOOE HEPATOPENAEI (EHP) AND COTTON SHRIMP DISEASE

3:30 Jee Eun Han, Kathy F.J. Tang, Donald V. Lightner
RECENT STUDIES ON ACUTE HEPATOPANCREATIC NECROSIS DISEASE (AHPND, ALSO KNOWN AS EARLY MORTALITY SYNDROME, EMS)

3:45 I.S. Bright Singh, Somnath S. Pai, A.A. Anas
BACTERIOPHAGES ISOLATED FOR THE CONTROL OF PATHOGENIC Vibrio harveyi IN SHRIMP HATCHERIES

4:00 Maarten Jay van Schoonhoven, Jintasataporn Orapint
EFFECT OF AN ALGAE-CLAY BASED BIOCATALYST ON THE DIGESTIVE AND GROWTH PERFORMANCE OF JUVENILE SHRIMP Litopenaeus vannamei

4:15 Stephen Blezinger, Orapint Jintasataporn, Melina Bonato, Glycon Santos, Stephen Blezinger
Saccharomyces cerevisiae CELL WALL SUPPLEMENTATION ON GROWTH PERFORMANCE AND IMMUNITY STATUS OF WHITE SHRIMP Litopenaeus vannamei

**TUNA AND SERIOLA**
Tuesday, February 23     2:00 - 5:00     Concorde C
Chairs: Dan Benetti, Alex Buentello

2:00 Daniel Benetti, Gavin Partridge, Alejandro Buentello, John Stieglitz
OVERVIEW AND RECENT PROGRESS ON TUNA AQUACULTURE

2:15 Vernon Scholey, Daniel Margulies, Jeanne Wexler, Maria Stein, Shukei Masuma, Yoshifumi Sawada
SPAWNING HISTORY OF BROODSTOCK YELLOWFIN TUNA Thunnus albacares AND IMPROVED METHODOLOGY FOR THEIR CAPTURE AND MAINTENANCE

2:30 Daniel Margulies, Jeanne Wexler, Maria Stein, Vernon Scholey, Tomoki Honryo, Michio Kurata, Yang-Su Kim, Taro Matsumoto, Amal Biswas, Amado Cano, Yasuo Agawa, Yoshifumi Sawada
LABORATORY RESEARCH ON EARLY LIFE STAGES OF YELLOWFIN TUNA Thunnus albacares WITH AN EMPHASIS ON JUVENILE REARING STUDIES
2:45  Jeanne Wexler, Daniel Margulies, Maria Stein, Yang-Su Kim, Tsukasa Sasaki, Tomoki Honryo, Vernon Scholey, Angel Guillen, Yasuo Agawa, Yoshifumi Sawada
COMPARATIVE GROWTH AND SURVIVAL STUDIES OF YELLOWFIN Thunnus albacares AND PACIFIC BLUEFIN Thunnus orientalis TUNA LARVAE

3:00  Alejandro Buentello, Manabu Seoka, Joseph Kearns, Delbert Gatlin
SOY PRODUCTS, EXTRUSION TECHNOLOGY AND NUTRITION: TOWARDS THE PRACTICAL FEEDING OF RANCHED TUNA

3:15  CANCELLED

3:30  Yasuo Agawa, Yoshihiro Takada, Yoshiyuki Yamane, Yoshifumi Sawada
IDENTIFICATION OF MALE AND FEMALE CHARACTERISTIC DNA MARKER OF PACIFIC BLUEFIN TUNA

3:45  Amal Biswas, Teruyoshi Tanaka, Yasuo Agawa, Yoshifumi Sawada, Kenji Takii
PREDICTION OF SOMATIC GROWTH PATTERN FROM CHANGES IN RNA, DNA AND PROTEIN SYNTHESIS AT EARLY STAGES IN YELLOWFIN TUNA Thunnus albacares

4:00  Jorge Gomezjurado, Oded Zmora, Neven Cinoti, Vice Katacic, John Stubblefield, Yonathan Zohar
FIRST PRODUCTION OF ATLANTIC BLUEFIN TUNA LARVAE AND JUVENILES IN REIRCULATING AQUACULTURE SYSTEMS IN NORTH AMERICA

4:15  Jose Fernandez Polanco, Ignacio Llorente
TRADE FLOWS OF BLUEFIN TUNA COMMODITIES IN THE MEDITERRANEAN

4:30  Lisa Armbruster, Kevin Stuart, Mark Drawbridge, Ronald Johnson
CALIFORNIA YELLOWTAIL Seriola lalandi EGG QUALITY AND CHEMICAL COMPOSITION

4:45  Luis Carlos Astiazarran, Roberto Flores-Aguilar, Mauricio Moreno
BAJA SEAS: THE FIRST COMMERCIAL YELLOWTAIL HIRAMASA Seriola lalandi IN MEXICO

MARINE AQUACULTURE IN A CHANGING ENVIRONMENT
Tuesday, February 23     2:00 - 5:00     Vendome B
Chairs: Mike Rust, Carol Price

2:00  Carol Price, Mike Rust, James A. Morris, Jr.
ENVIRONMENTAL CHANGE AND AQUACULTURE: WHAT DOES THE FUTURE HOLD?

2:15  Carol Price, James Morris, Jr., Todd Kellison, Mary Hunsicker
CLIMATE CHANGE IMPACTS ON U.S. MARINE AQUACULTURE: A REGIONAL PERSPECTIVE

2:30  Kenneth Black, Marcello Graziano
MARINE AQUACULTURE TO MITIGATE FOOD DEFICITS CAUSED BY ENVIRONMENTAL CHANGE
TUESDAY

2:45 Leila Basti, Kiyohito Nagai, Tatsuya Oda, Satoshi Nagai, Yuji Tanaka
REPRODUCTION OF BIVALVE MOLLUSCS IN A CHANGING ENVIRONMENT: IMPACT OF HARMFUL ALGAL BLOOMS AND IMPLICATIONS FOR AQUACULTURE

3:00 Luc Comeau, Thomas Guyondet, Cédric Bacher, Jon Grant, Rune Rosland, Rémi Sonier, Ramón Filgueira
CLIMATE CHANGE INFLUENCES CARRYING CAPACITY IN A COASTAL EMBayment DEDICATED TO SHELLFISH AQUACULTURE

3:15 Joao G. Ferreira, Suzanne B. Bricker, Julie M. Rose, Robin Landeck Miller, Philip Trowbridge, Raymond E. Grizzle, Katharine Wellman, Mark A. Tedesco
SHELLFISH AQUACULTURE FOR SEAFOOD PRODUCTION AND WATER QUALITY IMPROVEMENT

3:30 Kristen Gruenthal, Michael Canino, Dayv Lowry, Lorenz Hauser
OPPORTUNITIES AND PITFALLS FOR CONSERVATION AQUACULTURE IN A WARMING WORLD: PACIFIC COD AS A CASE STUDY

3:45 PANEL DISCUSSION

PARTITIONED AND INTENSIVE AQUACULTURE SYSTEMS
Tuesday, February 23 2:00 - 5:00 Loire
Chair: Dave Brune

2:00 Matthew Recsetar, Luke Roy, Jeonghwan Park
EVOLUTION OF INTENSIVE AQUACULTURE SYSTEMS IN ARKANSAS

2:15 Craig S. Tucker, Travis W. Brown, Jonathan W. Pote, Charles L. Wax
IMPACT OF PRODUCTION INTENSIFICATION ON WATER USE EFFICIENCY IN CATFISH POND AQUACULTURE

2:30 Eugene Torrans, Brian Ott, Craig Tucker
INTENSIVE PRODUCTION OF HYBRID CATFISH

2:45 Eugene L. Torrans, Travis W. Brown, Craig S. Tucker
CATFISH PRODUCTION USING INTENSIVE, POND-BASED CULTURE SYSTEMS IN MISSISSIPPI

3:00 Craig S. Tucker, Travis W. Brown
PERFORMANCE EVALUATION OF PUMPING SYSTEMS USED IN COMMERCIAL-SCALE, SPLIT-POND AQUACULTURE

3:15 David Brune, Travis W. Brown, Craig S. Tucker
CATFISH PRODUCTION AND OXYGEN AND NITROGEN DYNAMICS IN SPLIT, INTENSIVE, AND CONVENTIONAL CATFISH PRODUCTION PONDS

3:30 Herbert Quintero, Jeonghwan Park, Luke Roy, Anita Kelly, David Heikess
COMPARISON OF DIFFERENT POND PRODUCTION SYSTEMS FOR RAISING LARGEMOUTH BASS

3:45 Robert G. Bartley
PARTITIONED AQUACULTURE SYSTEMS AN AUSTRALIAN PERSPECTIVE CULTURING MURRAY COD, SILVER PERCH AND JADE PERCH
<table>
<thead>
<tr>
<th>Time</th>
<th>Name</th>
<th>Topic</th>
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<tr>
<td>4:00</td>
<td>John Hargreaves</td>
<td>COMMERCIAL RECIRCULATING POND SYSTEMS IN LATIN AMERICA</td>
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<tr>
<td>4:15</td>
<td>Carole Engle, Ganesh Kumar</td>
<td>DOES IT MAKE ECONOMIC SENSE TO INTENSIFY PRODUCTION? THE CASE OF SPLIT PONDS AND INCREASED AERATION RATES FOR U.S. CATFISH PRODUCTION</td>
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<td>4:30</td>
<td>Terry Hanson, Lisa Bott, Luke Roy, Jesse Chappell</td>
<td>IN-POND RACEWAY CATFISH PRODUCTION AND ECONOMIC ANALYSIS</td>
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<td>4:45</td>
<td>Jesse A. Chappell, Terry Hanson, Eric Peatman, Esau Arana, George Fullerton, Lisa Bott, Wilson Holland</td>
<td>DEVELOPMENT OF A FRESH APPROACH TO ON-FARM AQUACULTURE RESEARCH UTILIZING IN-POND RACEWAY TECHNOLOGIES</td>
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**BIOFOULING**

Tuesday, February 23  2:00 - 5:00  Bordeaux  
Chairs: Andrew Mount, Gary Dickinson

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<tr>
<th>Time</th>
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<tr>
<td>2:00</td>
<td>Andrew Mount, Vera Bin San Chan</td>
<td>THE GROWING COMPLEXITY OF BARNACLE CYPRID GLUE</td>
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<tr>
<td>2:15</td>
<td>Henrik Glenner, Jens T. Høeg</td>
<td>A COMPARABLE APPROACH TO SETTLEMENT AND ATTACHMENT IN CIRRIPEDIA</td>
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<td>2:30</td>
<td>Christopher Spillmann, Zheng Wang, Dagmar Leary, Jinny Liu, Robert Settlage, Kenan Fears, Stella North, Christopher So, Jenifer Scancell, Anahita Mostaghim, Tara Essock-Burns, Sarah Haynes, Kathryn Wahl</td>
<td>MOLT-DEPENDENT TRANSCRIPTOMIC ANALYSIS OF ADULT BARNACLE Amphibalanus amphitrite</td>
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<td>2:45</td>
<td>Gary H. Dickinson, Conall G. McNicholl, Jessica A. Nardone, Kyle R. Siegel, Dana Tedesco, Taliah Khan, Beatriz Orihuela, Daniel Rittschof</td>
<td>ASSESSING THE EFFECTS OF SALINITY AND ACIDIFICATION ON BARNACLE ADHESION, GROWTH AND BIOMINERALIZATION</td>
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<td>3:00</td>
<td>Jonathan Wilker, Erik Alberts, Andres Tibabuzo</td>
<td>UNDERSTANDING THE STRUCTURAL AND CHEMICAL BASIS OF OYSTER CEMENTATION</td>
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<td>3:15</td>
<td>Manuel Figueroa, Jennifer Schablik, Gary Dickinson</td>
<td>STRUCTURAL EFFECTS OF HYDROPHOBIC COATINGS ON BARNACLE ADHESION</td>
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<td>3:30</td>
<td>Michael Detty, Corey Damon, Caitlyn Gatley, John Finlay, Sofia Franco, Tony Clare</td>
<td>TITANIUM-CONTAINING XEROGEL COATINGS AS ANTI-FOULING/FOULING-RELEASE SURFACES USING NATURALLY OCCURRING REAGENTS IN THE SEA</td>
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<td>3:45</td>
<td>Leslie N. Sturmer, William White, Kelly Grogan, Shirley Baker</td>
<td>EVALUATION OF BIOCIDE-FREE COATINGS IN REDUCING BIOFOULING ON CULTURE GEAR TO INCREASE HARD CLAM PRODUCTION IN FLORIDA, USA</td>
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<td>4:00</td>
<td>Gilbert Walker</td>
<td>ALTERNATIVES TO COPPER TREATMENT OF CAGE NETS FOR SALMON FARMING</td>
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</tbody>
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2:00  Louis R. D’Abramo
PARADOX OF FRESHWATER PRAWN *Macrobrachium rosenbergii* FARMING IN
THE UNITED STATES: NOTEWORTHY RESEARCH ADVANCES AND COMMERCIAL
SUCCESS, BUT STILL AN “EMERGING” AQUACULTURE SPECIES

2:30  Shawn Coyle, Eugene Blair, James Tidwell
TRIALS AND TRIBULATIONS OF LARVICULTURE DEVELOPMENT FOR THE
AFRICAN RIVER PRAWN *Macrobrachium vollenhovenii*

2:45  William H. Daniels
ON THE ROAD TO SOLVING THE HIGH MORTALITY IN FRESHWATER PRAWN
HATCHERIES IN MYANMAR AND BANGLADESH

3:00  Jose Valverde, Harold Phillips
A CONTRIBUTION TO THE UNDERSTANDING OF HOW TO CULTURE THE NATIVE
PRAWN *Macrobrachium carcinus* OF THE CARIBBEAN COAST OF COSTA RICA

3:15  Wagner C. Valenti, Michael B. New
STATUS OF FRESHWATER PRAWN – TILAPIA POLYCULTURE: A REVIEW

3:30  Karina Ribeiro, David Araujo Borges, Janaina da Silva Santos,
Eduarda Tayna de Almeida, Francielle Oliveira dos Santos,
Emerson Eduardo de Moura, Paulo Mario Carvalho de Faria
RESEARCH DEVELOPED WITH *Macrobrachium* sp. AT THE FEDERAL UNIVERSITY
OF RIO GRANDE DO NORTE, BRAZIL

3:45  Francisco Parajon, Harold K. Phillips, Luis Ortiz, Magdriel Castellon, Peter Van Wyk
DEVELOPMENT OF HATCHERY FEEDING PROTOCOLS FOR *Macrobrachium rosenbergii* REPLACING *Artemia* NAUPLII AND TRADITIONAL SUPPLEMENTAL
FEEDS WITH COMMERCIAL LIQUID AND DRY MICROPARTICULATE DIETS

4:00  Wagner C. Valenti, Dallas L. Flickinger, Sérgio R. Bittioni, Daniela P. Dantas
FEASIBILITY OF INTEGRATED MULTITROPHIC PRODUCTION OF THE AMAZON
RIVER PRAWN AND TAMBAQUI

4:15  Dallas Lee Flickinger, Daniela Pimenta Dantas, Wagner Cotroni Valenti
THE BUDGET OF NITROGEN IN THE CULTURE OF THE AMAZON RIVER
PRAWN AND TAMBAQUI FARmed IN MONOCULTURE AND IN INTEGRATED
MULTITROPHIC SYSTEMS

4:30  Patricia Moraes-Valenti, Gelcirene de Albuquerque Costa
STABLE ISOTOPE ANALYSIS IN AMAZON RIVER PRAWN AND TAMBAQUI FARmed
IN DIFFERENT CULTURE SYSTEMS
4:45  Karina Ribeiro, Mariana Cutolo de Araujo, Eduardo Luis Cupertino Ballester, Petronio Coelho Filho
MANAGEMENT TECHNOLOGY FOR THE HATCHERY, NURSERY, AND GROW-OUT PHASES OF FRESHWATER PRAWN SPECIES WITH POTENTIAL IN AQUACULTURE

5:00  Amir Sagi, Assaf Shechter, Ohad Rosen, Brit Eilam, Dudu Azulay
MONOSEX CULTURE OF FRESHWATER PRAWN *M. rosenbergii*

**ORNAMENTALS**
Tuesday, February 23     2:00 - 5:00     Burgundy
Chair: Qiang (John) Lin

2:00  Miguel Mies
MARINE ORNAMENTAL AQUACULTURE IN BRAZIL: NEED FOR RESEARCH AND INTEGRATION BETWEEN UNIVERSITIES AND BREEDERS

2:15  Chatham Callan
ADVANCES IN YELLOW TANG *Zebrasoma flavescens* CULTURE

2:30  Elizabeth Sparks, Craig Kasper
INCORPORATION OF CITRUS PULP IN DIETS FED TO JUVENILE BUSHY-NOSED PLECO *Ancistrus cirrhosus* AS A LOCAL ALTERNATIVE TO TRADITIONAL FIBROUS CARBOHYDRATE SOURCES

2:45  Krystin Damico, Elizabeth A. Sparks, Craig S. Kasper
FECUNDITY OF AN AFRICAN CICHLID *Pseudotropheus zebra* IS INCREASED AS A RESULT OF INCREASING ENVIRONMENTAL SALINITY

3:00  Qiang Lin
SEAHORSE AND PIPEFISH RESOURCES IN CHINA

3:15  Geng Qin, Liangmin Huang, Qiang Lin
AGGREGATING INTO SHALLOW BAYS FOR BREEDING DURING WARM SEASON AND OVERWINTERING BY LOCAL OFFSHORE MIGRATION IN *Hippocampus mohnikei*

3:30  Perla Urquidez-Bejarano, Mayra L. González-Félix, Martin Perez-Velazquez, Reina Castro-Longoria
GONAD PROXIMATE AND FATTY ACID COMPOSITION, AND STAGES OF GONADAL DEVELOPMENT OF WILD KING ANGELFISH *Holacanthus passer*

3:45  Heather Hamlin, Kathleen Marciano, Craig Downs
TOXICITY OF NONYLPHENOL IN TRANSPORT BAGS FOR MARINE ORNAMENTALS

4:00  Yue Liu, Leticia Torres, Huiping Yang, Terrence Tiersch
ADDRESSING QUALITY CONTROL FOR DEVELOPMENT OF SPERM REPOSITORIES OF PROBLEMATIC FISH SPECIES
TUESDAY

FEDERAL TOWN HALL
Tuesday, February 23 2:00 - 5:00 Concorde A
Chair: Betsy Hart

2:00 This session provides an opportunity for direct dialogue with key aquaculture leaders and managers from diverse federal agencies with the goal of identifying critical issues, problems and/or opportunities for federal agencies to address in partnership with industry in 2016.

Participating Agencies and Representatives:
Dr. Gene Kim
National Program Leader – Aquaculture
Interagency Working Group on Aquaculture (IWG-A) and USDA – National Institute of Food and Agriculture (NIFA)

Dr. Caird Rexroad
National Program Leader – Aquaculture
USDA – Agricultural Research Service (ARS)

Dr. Lee Ann Thomas
Director, Aquaculture, Swine and Avian Health Center
USDA – Animal and Plant Health Inspection Service (APHIS), Veterinary Services

Ms. Barbara Dwyer
Senior Analyst, Office of Policy and Program Development
USDA – Food Safety and Inspection Service (FSIS)

Mr. Bruce Boess
Head, Poultry & Specialty Commodities Section
USDA – National Agricultural Statistics Service (NASS)

Ms. Desiree Morningstar
Regulatory Program Manager
U.S. Army Corps of Engineers (USACE)

Ms. Jenny Molloy
Lead Environmental Protection Specialist, Office of Water, Water Permits Division
U.S. Environmental Protection Agency (EPA)

Mr. David Miko
Division Chief, Fish and Aquatic Conservation
U.S. Fish and Wildlife Service (USFWS)

Mr. Brett Koonse
Consumer Safety Officer
FDA – Center for Food Safety and Applied Nutrition (CFSAN)

Dr. Jennifer Matysczak
Aquaculture Drugs Team Leader, Office of New Animal Drug Evaluation
FDA – Center for Veterinary Medicine (CVM)

Dr. Michael Rubino
Director, Office of Aquaculture
NOAA – Fisheries
WEDNESDAY, February 24

OFFSHORE AQUACULTURE
Wednesday, February 24   8:30 - 10:15   Champagne 2
Chair: Scott Lindell

8:30  Susan M. Bunsick
AN EMERGING ROADMAP FOR NAVIGATING THE REGULATORY ENVIRONMENT FOR OFFSHORE AQUACULTURE IN THE UNITED STATES

8:45  Neil Anthony Sims, Gavin Key
THE OCEAN STEWARDS, THE KEYSTONE XL PIPELINE, AND AMERICA’S INFATUATION WITH BEEF

9:00  Langley Gace
RECENT ADVANCES IN SUBMERGED OPEN OCEAN AQUACULTURE

9:15  Diane Windham
OPPORTUNITIES AND CHALLENGES FOR OFFSHORE AQUACULTURE IN SOUTHERN CALIFORNIA

9:30  Kelly Stromberg
CATALINA SEA RANCH – AN INNOVATIVE WAY TO GROW AND MONITOR SHELLFISH

9:45  Scott Lindell, David Bailey
WHAT WE CAN LEARN FROM ENTANGLEMENT CASES OF WHALES AND TURTLES IN MUSSEL FARMING GEAR

10:00 Carol Price, Ellen Keane, David Morin, Christine Vaccaro, David Bean, James Morris Jr.
PROTECTED SPECIES AND LONGLINE MUSSEL AQUACULTURE INTERACTIONS

CRUSTACEANS - CONTINUED
Wednesday, February 24   8:30 - 10:00   Loire
Chair: Brad Stevens

8:30  Stephanie Martinez-Rivera, Bradley G. Stevens
SIZE AT SEXUAL MATURITY IN THE FEMALE RED DEEP-SEA CRAB Chaceon quinquedens IN THE MID-ATLANTIC BIGHT

8:45  Shadaesha Green, J. Sook Chung
CRUSTACEAN HYPERGLYCEMIC HORMONE OF THE RED DEEPSEA CRAB Chaceon quinquedens IDENTIFICATION AND ITS POTENTIAL ROLE AS A REPRODUCTIVE REGULATOR

9:00  Justin Wilson, Stevens Bradley
AGE DETERMINATION OF RED DEEP-SEA CRAB Chaceon quinquedens BY GROWTH RING ANALYSIS
ORGANIC AQUACULTURE
Wednesday, February 24  8:30 - 10:00  Concorde B
Chair: George Lockwood

8:30  George Lockwood
DEVELOPMENTS IN ORGANIC AQUACULTURE IN THE U.S. WITH EXPLANATION OF THE USDA PROPOSED FINAL RULE FOR ORGANIC AQUACULTURE

9:00  Carl Salamone
CONSUMER DEMAND FOR ORGANIC AQUACULTURE PRODUCTS

SHRIMP NUTRITION
Wednesday, February 24  8:30 - 12:30  Champagne 1
Chairs: Luke Roy, Alberto Nunes

8:30  Craig L. Browdy
THE PROMISE OF NEW AQUAFEED AND FEEDING TECHNOLOGIES

9:00  Kenneth Thompson, Kristy Allen, Benjamin Bowman, Vaun Cummins, Keith Filer, James Tidwell, Andrew Ray, Vikas Kumar
OPTIMIZING THE USE OF ALGAL MEAL Schizochytrium sp. AS A FISH OIL REPLACER IN THE PRACTICAL DIETS OF PACIFIC WHITE SHRIMP Litopenaeus vannamei

9:15  Kenneth Thompson, Kristy Allen, Benjamin Bowman, Vaun Cummins, Keith Filer, James Tidwell, Andrew Ray, Vikas Kumar
AN EVALUATION OF THE COMPLETE REPLACEMENT OF FISH OIL WITH ALGAE MEAL Schizochytrium sp. IN FISHMEAL-FREE DIETS FOR PACIFIC WHITE SHRIMP Litopenaeus vannamei

9:30  Vikas Kumar, Kristy M. Allen, Kenneth R. Thompson, Benjamin A. Bowman, Vaun C. Cummins, Keith Filer, Amit K. Sinha, James H. Tidwell
PHYSIOLOGY AND GENE BASED COMPARATIVE EVALUATION OF OMEGA-3 RICH ALGAL MEAL IN PLANT PROTEIN AND FISH MEAL DIETS FOR PACIFIC WHITE SHRIMP Litopenaeus vannamei

9:45  D. Allen Davis, Yangen Zhou
IMPROVED HIGH SOY SHRIMP FEEDS FOR THE PACIFIC WHITE SHRIMP Litopenaeus vannamei

10:00  BREAK

10:30  D. Allen Davis, Yangen Zhou, Ramasamy Thirumurugan, Qingkui Wang, Chong M. Lee
USE OF DRY HYDROLYSATE FROM SQUID AND SCALLOP PRODUCTS IN PLANT BASED DIETS FOR PACIFIC WHITE SHRIMP Litopenaeus vannamei

10:45  Fabio Soller, Luis Alejandro Daqui
THE REAL WORLD ANSWER TO THE INVESTMENT ON EMPYREAL® 75 FOR YOUR SHRIMP PRODUCTION

11:00  Andrew Logan
THE UTILIZATION OF PROFLOC™ AS A FISHMEAL REPLACEMENT IN DIETS FOR PACIFIC WHITE SHRIMP Litopenaeus vannamei
11:15 Xuan Qiu, Donald A. Davis
ULVA MEAL AS A SUBSTITUTE FOR FISH MEAL IN PRACTICAL DIETS FOR PACIFIC WHITE SHRIMP *Litopenaeus vannamei*

11:30 Karthik Masagounder, Claudia Figueiredo Silva
RESPONSES OF SHRIMP TO NOVEL METHIONINE SOURCE IN CLEAR AND GREEN WATER SYSTEMS

11:45 Susan Laramore, Alfred Munoz, Richard Baptiste, Paul Wills, Dennis Hanisak
USE OF IMTA HARVESTED SEAWEED *Ulva lactuca* IN A RAS HETEROTROPHIC SHRIMP BIOFLOC SYSTEM

12:00 Mary Jane Apines-Amar, Karen Grace Andrino-Felarca, Rowena Cadiz, Julnafe Balito, Valeriano Corre, Jr.
FERMENTED COPRA MEAL AS POTENTIAL REPLACEMENT FOR FISH MEAL PROTEIN IN BLACK TIGER SHRIMP *Penaeus monodon* PRACTICAL DIET: EFFECTS ON GROWTH AND FEED EFFICIENCY

12:15 Jeongwhui Hong, Seunghan Lee, Mohammad Moniruzzaman, Jun-Young Bae, Kyung-Hoon Chang, Sungchul C. Bai, Doyoung Kim
EVALUATION OF VEGETABLE PROTEIN BASED INGREDIENTS IN PARTIAL REPLACEMENT OF FISHMEAL ON GROWTH, NON-SPECIFIC IMMUNE RESPONSES, DIGESTIVE ENZYME ACTIVITIES AND NUTRIENT DIGESTIBILITY OF JUVENILE WHITE SHRIMP *Litopaeneus vannamei*

12:30 LUNCH

1:30 Vikas Kumar, Amit Kumar Sinha, James H. Tidwell
METABOLIC IMPLICATIONS OF DIETARY CHOLESTEROL IN SHRIMP

2:00 Charles Derby, Farida Elsayed, Samantha Williams, Cristian Gonzalez, Mina Choe, Anant Bharadwaj, George Chamberlain
BEHAVIORAL ASSAYS DEMONSTRATE HOW KRILL MEAL ENHANCES ATTRACTABILITY AND PALATABILITY OF FEED PELLETS FOR PACIFIC WHITE SHRIMP *Litopenaeus vannamei*

2:15 Charles Derby, MiNa Choe, Farida Elsayed, Sarah Miller, Samantha Williams, Cristian Gonzalez, Anant Bharadwaj, George Chamberlain
DEVELOPMENT OF FEED ATTRACTANT MIXTURES TO INCREASE CONSUMPTION AND REDUCE WASTE IN HIGH-SOY DIETS FOR PACIFIC WHITE SHRIMP *Litopenaeus vannamei*

2:30 To Pham Thi Ha Van, D. Allen Davis, Melanie A. Rhodes, Chuck Roe, Shelby Oliver, Terrill R. Hanson
EVALUATION OF THREE FEEDING RATES FOR PACIFIC WHITE SHRIMP *Litopenaeus vannamei* UNDER POND PRODUCTION CONDITIONS

2:45 Jake Goodall, Nicholas Wade, David Merritt, Melony Sellars, Kinam Salee, Greg Coman
THE EFFECTS OF ADDING MICROBIAL BIOMASS TO GROW-OUT AND MATURATION DIETS ON THE REPRODUCTIVE PERFORMANCE OF BLACK TIGER SHRIMP *Penaeus monodon*

3:00 Gabriela Gaxiola, Jorge Gamboa, Gerard Cuzon
PHYSIOLOGICAL ASPECTS LINKED WITH DIETARY FISHMEAL REPLACEMENT FOR *Litopenaeus vannamei*
**SEA URCHINS**
Wednesday, February 24  8:30 - 12:30  Bordeaux
Chair: Shirley Baker

8:30  **Yukio Agatsuma**, Hikaru Endo, Ayaka Horikoshi, Msakazu N. Aoki
ABRUPT INCREASE IN POPULATION SIZE OF THE SEA URCHIN *Mesocentrotus nudus* AND KELP DEFORESTATION OFF THE PACIFIC COAST IN NORTHERN MIYAGI AFTER THE 2011 TOHOKU TSUNAMI DISASTER, JAPAN

8:45  **Libin Zhang**, Yang Pan, Jiamin Sun, Tao Zhang, Hongsheng Yang
MOVEMENT AND FEEDING BEHAVIOR AND PHYSIOLOGY OF SEA CUCUMBER *Apostichopus japonicus*

9:00  **Hongsheng Yang**, Tao Zhang, Libin Zhang
BIOLOGY AND AQUACULTURE OF SEA CUCUMBER *Apostichopus japonicus*

9:15  **Shirley Baker**, Ruth Francis-Floyd, Roy Yanong, Jan Landsberg, Nicole Stacy, Debbie Poudre, Tom Waltzek, Yasu Kiryu, John Hunt, Bill Sharp, Roxanna Smolowitz, Greg Beck, Ken Leber, David Vaughn, Martin Moe
DEVELOPMENT OF A HEALTH ASSESSMENT PROTOCOL FOR HATCHERY-REARED LONG-SPINED SEA URCHINS *Diadema antillarum* IN FLORIDA, USA

9:30  **Marlee Hayes**, Laura E. Heflin, John M. Lawrence, Stephen A. Watts
FEED INTAKE AND SATIETY IN THE SEA URCHIN *Lytechinus variegatus*

9:45  **Yuan Yuan**, Laura E. Heflin, Mickie L. Powell, Addison L. Lawrence, Stephen A. Watts
MACRONUTRIENT ALLOCATION VARIES WITH DIETARY PROTEIN AND CARBOHYDRATE LEVELS IN THE SEA URCHIN *Lytechinus variegatus*

10:00  **BREAT**:  **BREAK**

10:30  **Diana María Cuesta-Gómez**, M. del Pilar Sánchez-Saavedra
EFFECTS OF THE PROTEIN AND CARBOHYDRATE LEVELS ON GONAD INDEX AND GONAD QUALITY OF ADULT PURPLE SEA URCHIN *Strongylocentrotus purpuratus* FROM BAJA CALIFORNIA, MEXICO

10:45  **Tazin Fahmi**, Grayson Ostermeyer, Ahmed Mustafa
NUTRACEUTICAL-INDUCED STRESS MODULATION IN SEA URCHINS, REARED IN AQUACULTURE

11:00  **Karen E. Jensen**, Lacey N. Dennis, Yuan Yuan, J. Christopher Taylor, Robert J. Barry, Mickie L. Powell, Stephen A. Watts
URCHIN EGESTA FORMATION AND COMPOSITION AND ITS TROPHIC ROLE IN A POLYCulture SYSTEM
SHELLFISH GENETICS
Wednesday, February 24     8:30 - 12:30     Burgundy
Chair: Paul Rawson

8:30  **Jessica Small**, Peter Kube, Stan Allen
ADVANCES IN *C. virginica* BREEDING IN CHESAPEAKE BAY, USA: FROM MASS TO FAMILY-BASED SELECTION

8:45  **Chris Langdon**, Claudio Melo, Evan Durland, Blaine Schoolfield
GENETICS PARAMETERS FOR PERFORMANCE TRAITS OF THE PACIFIC OYSTER *Crassostrea gigas*

9:00  **Paul Rawson**, Scott Lindell, Ximing Guo, Inke Sunila
DISEASE-RESISTANCE AND IMPROVED PERFORMANCE FOR GENETICALLY IMPROVED AND CROSS-BRED EASTERN OYSTERS *Crassostrea virginica: RESULTS FROM A DECADE OF FIELD TRIALS IN NEW ENGLAND*

9:15  **Katherine Hornick**, Louis Plough
TRACKING THE PARENTAL CONTRIBUTION OF THE EASTERN OYSTER *Crassostrea virginica* THROUGHOUT HATCHERY PRODUCTION USING MICROSATellite MARKERS

9:30  **Ximing Guo**, Guodong Wang, Bassem Allam, Carmelo del Castillo, Emmanuelle Pales Espinosa, Arnaud Tanguy, John Kraeuter
IDENTIFICATION OF QPX-RESISTANCE MARKERS BY GENOME-WIDE CANDIDATE-GENE ASSOCIATION STUDY IN THE HARD CLAM

10:00  BREAK

10:30  **Ming Liu**, Cui Li, Guodong Wang, Ximing Guo
IDENTIFICATION OF DISEASE-RESISTANCE MARKERS BY NEXT-GENERATION SEQUENCING IN THE EASTERN OYSTER

10:45  **Mark Camara**, Aditya Kesarcodi-Watson, Henry Kaspar, Seiha Yen, Nick King
SELECTIVE BREEDING OF THE PACIFIC OYSTER *Crassostrea gigas* FOR ENHANCED RESILIENCE TO OSTREID HERPESVIRUS-1 MICROVARIANT (OSHV-1 µ-VAR): A QUANTITATIVE GENETIC ANALYSIS OF FIELD TRIALS AND LAB-BASED CHALLENGES

EVIDENCE FOR MITOTIC INSTABILITY IN TRIPLOID PROGENY OF THE AMERICAN OYSTER *Crassostrea virginica* PRODUCED BY TETRAPLOID × DIPLOID CROSSES

11:15  **Huiping Yang**, E Hu, Leticia Torres, Standish K. Allen, Jr., Terrence R. Tiersch
CRYOPRESERVATION OF SPERM FROM TETRAPLOID EASTERN OYSTER *Crassostrea virginica*
FISH WELFARE
Wednesday, February 24     8:30 - 12:30     Concorde C
Chair: Craig Watson

8:30 Randy McMillan
A PRODUCER’S PERSPECTIVE

9:00 Don Stevens
DO YOU BELIEVE THAT FISH CAN FEEL PAIN? AN ACADEMIC PERSPECTIVE

9:30 Kathleen Hartman
THE DIFFERENCE BETWEEN POPULATION AND INDIVIDUAL WELFARE

11:00 Craig A. Watson
HOW FISH BECAME WARM-BLOODED IN THE UNITED STATES

IMSEGI (INTERNATIONAL MARINE SHRIMP ENVIRONMENTAL GENOMICS INITIATIVE):
MONITORING ECOSYSTEMS, ANIMALS AND PUBLIC HEALTH
Wednesday, February 24     8:30 - 3:30     Chablis
Chair: Acacia Alcivar-Warren

The IMSEGI session focus is the holistic theme of “ONE HEALTH: Conserving Healthy Ecosystems, to Maintain Healthy Animals, to Protect Human Health long-term”.

Ecosystem Health Theme Moderators:
Frank David, Maria Leticia Arena Ortiz, Ana Soto-Rodriguez, Acacia Alcivar-Warren, Chinnaiah Amutha

8:30 Acacia Alcivar-Warren
INTRODUCTION / WELCOME – Johnny Castro Montealegre Awards: Recognition to Students (27), Researchers (Bruno-Gomez-Gil) & Industry (Ocean Farms, small businesses)

THE MANGROVE EPIGENOME (mangroveENCODE) PROJECT: DEVELOPING TECHNOLOGIES FOR ASSESSMENT OF CO2, THE MICROBIOME, AND ENDOCRINE-DISRUPTING CHEMICALS (GLYPHOSATE, METALS) OF MANGROVES SEDIMENTS FOR CONSERVATION OF SELECTED MANGROVE HABITATS- A PILOT PROJECT

9:00 Frank David, Pierre Tailllardat, Cyril Marchand, Nathalie Molnar, Tarik Meziane
MANGROVE ECOSYSTEMS AND SHRIMP FARMING INTERACTIONS ALONG TROPICAL COASTLINES; A PHYSICAL AND CHEMICAL ASSESSMENT
MICROCEPHALY, ZIKA VIRUS, GMO MOSQUITOS, AND *Bacillus thuringiensis* cry1 TOXINS USED FOR MOSQUITO CONTROL (ALSO ASSOCIATED WITH AHPND/EMS-CAUSING *Vibrio parahaemolyticus*) – BASIC RESEARCH NEEDED

9:30  **Maria Leticia Arena Ortíz**, Xavier Chiappa-Carrara, Javier Apodca Hernandez, Ernesto Perez Rueda  
MICROBIAL DIVERSITY IN WETLANDS OF SISAL, YUCATAN, MEXICO

10:00  **BREAK**

**Ecosystem and Animal Health Themes Moderators:**  
Sonia Soto-Rodriguez, Chinnaiah Amutha, Acacia Alcivar-Warren, Maria Leticia Arena Ortiz, Marisela Hernandez

10:30  **María Leticia Arena Ortíz**, Liliana Castro Cubillos, Valeria Souza  
TAXONOMIC RICHNESS IN THE MICROBIOMA OF THE PACIFIC WHITELEG SHRIMP *Litopenaeus vannamei* IN DIFFERENT DEVELOPMENTAL STAGES (A DDGE-GUIDED VISION)

10:45  **Cynthia Saloma**, Edgar Amar, Leobert dela Pena  
PHILIPPINE PATHOGENOMICS INITIATIVE REVEALS COUNTRYWIDE SITES OF VIBRIOISIS AND AHPND OUTBREAKS IN 2014-2015 AND IDENTIFIES NEW BACTERIAL ISOLATES AFFECTING LOCAL *P. monodon* AND *P. vannamei* IN AQUACULTURE SHRIMP FARMS

GENOMIC COMPARISON OF *Vibrio* STRAINS RESPONSIBLE FOR AHPND/EMS OF SHRIMPS

11:45  **Subha Bhassu**, Tahereh Ali Nejad, Rofina Yasmin Othman  
INSIGHTS ON HOW NATURAL SELECTION DRIVES FRESHWATER PRAWNS TO DEVELOP RESISTANCE AND SURVIVES TOWARDS IHHNV INFECTION

INFECTIOUS IHHNV OF PENAEID SHRIMP - POTENTIAL ASSOCIATION WITH SLOW GROWTH (RUNT DEFORMITY SYNDROME-LIKE) AND THE NON-LTR RETROTRANSPOSON RTE-3_LVa

12:30  **LUNCH**

**Animal and Human Health Themes Moderators:**  
Sonia Soto-Rodriguez, Chinnaiah Amutha, Acacia Alcivar-Warren, Maria Leticia Arena Ortiz, Marisela Hernandez

1:30  **Acacia Alcivar-Warren**  
EPIGENETICS 101 – CONSIDERATIONS FOR AQUACULTURE BREEDING PROGRAMS
1:45  Rungrapa Leelatanawit, Nitsara Karoonuthaisiri, Umaporn Uawisetwathana, Somjai Wongtripop
MOLECULAR MECHANISM OF EYESTALK ABLATION TO ENHANCE REPRODUCTIVE MATURATION IN THE FEMALE BLACK TIGER SHRIMP

2:00  Amutha Chinniah
HORMONAL DISRUPTION IN SHRIMP & TILAPIA CAUSED BY GLYPHOSATE - BIOREMEDIATION EFFORTS

2:30  Acacia Alcivar-Warren
WHOLE GENOME SEQUENCING OF Pandalus borealis, SPF Litopenaeus vannamei, AND Penaeus monodon FROM THE UNITED STATES

MEETING OF ‘THE MANGROVE EPIGENOME (mangroveENCODE) PROJECT COLLABORATORS TO DISCUSS RESEARCH PROTOCOLS, GLYPHOSATE- AND Bacillus thuringiensis-FREE AQUACULTURE, AND HEAR MARISELA HERNANDEZ TALK ABOUT “FEASIBILITY OF SMALL-SCALE ORGANIC SHRIMP, Litopenaeus schmitti, AQUACULTURE IN CUBA: EFFORTS TO HELP WOMEN FROM THE MANGROVES TO START SMALL BUSINESS IN AQUACULTURE OF LOCAL SPECIES, WHILE HELPING TO CONSERVE BIODIVERSITY” - OPEN TO THE PUBLIC

ECONOMICS AND MARKETING
Wednesday, February 24  8:30 - 4:30  Versailles 3
Chair: Frank Ashe

8:30  Bertrand Le Gallic, Maria Cozzolino, Fabienne Daurès, Ralf Döring, Sophie Girard, Tobias Lasner, Laurent Le Grel, Mike Turenhout, Jarno Virtanen
ASSESSING THE EFFECTS OF REGULATORY MEASURES ON THE FISHERIES AND AQUACULTURE SECTORS: THE SUCCESS APPROACH

8:45  Tonje C. Osmundsen, Petter Almklov, Ragnar Tveterås
FISH FARMERS AND PUBLIC SERVANTS COPING WITH THE WICKEDNESS OF AQUACULTURE

9:00  Jonathan van Senten, Carole Engle
COSTS OF THE U.S. REGULATORY ENVIRONMENT ON BAITFISH AND SPORTFISH AQUACULTURE

9:15  Frank Asche
THE COST OF AN OUTBREAK OF PANCREAS DISEASE FOR SALMON

9:30  Kristin H. Roll
INSURANCE AND MORAL HAZARD IN SALMON AQUACULTURE

10:00  BREAK

10:30  Siddhartha Dasgupta, Benjamin Bowman, Kristy Allen, Kenneth Thompson
AN ECONOMIC ANALYSIS OF SMALL-SCALE HATCHERY AND NURSERY OF THE AUSTRALIAN RED CLAW CRAYFISH Cherax quadricarinatus
10:45 **Marlon Greensword, Ronald Malone**
COST ANALYSIS OF AN AILIFTED POLYGEYSER® RAS TILAPIA PRODUCTION FACILITY

11:00 **Atle Guttormsen, Md. Akhtaruzzaman Kahn, Kristin Helen Roll**
PRODUCTION RISK OF PANGAS *Pangasius hypophthalmus* FISH FARMING IN BANGLADESH

11:15 **José L. Fernández Sánchez, José M. Fernández Polanco, Ladislao Luna Sotorrio, Ignacio Llorente García**
FIRM FACTORS AFFECTING PROFIT MARGINS IN THE EUROPEAN AQUACULTURE INDUSTRY: ANALYSIS OF THE PERIOD 2009-2013

11:30 **Laurence Sombardier, Gregory P. Barbour**
HAWAII OCEAN SCIENCE AND TECHNOLOGY PARK: DEVELOPING AN ECONOMIC ENGINE BASED ON AQUACULTURE AND SUSTAINABILITY

11:45 **Bernadette Fregene, Adeyinka Abiona, Bolarin Omonona**
DETERMINANTS OF RURAL HOUSEHOLD DEMAND FOR FISH IN COMMUNITIES OF WATER AND NON-WATER BODIES IN OYO STATE, NIGERIA

12:00 **Madan Mohan Dey, Prasant Allaka**
A REVIEW OF RECENT SEAFOOD DEMAND STUDIES IN DEVELOPED AND DEVELOPING COUNTRIES: IMPLICATIONS FOR AQUACULTURE INDUSTRY

12:30 LUNCH

1:30 **Morten Heide, Frank Asche, Finn-Arne Egenes, Geir Sogn-Grundvåg**
INCREASED DEMAND FOR SALMON: ENTERING NEW MARKETS

1:45 **Bernadette Fregene, Azeez Kareem**
FARMED FISH MARKET SEGMENTATION BASED ON CONSUMERS’ PERCEPTION, SITUATION AND INFORMATION NEEDS IN LAGOS STATE, NIGERIA

2:00 **Ursula L. Tveteraas, Sigbjørn Tveteraas**
PRICE TRANSMISSION AND DEMAND GROWTH FOR DIFFERENT PRODUCT FORMS: THE DEMAND FOR SALMON

2:15 **Jonas Torrissen, Yuko Onozaka**
FOOD LIFESTYLE AS A DETERMINANT FOR CONSUMER SEGMENTS OF SEAFOOD

2:30 **Kristin Lien, Ragnar Tveteras**
SALMON CONSUMPTION OF HOUSEHOLDS WITH CHILDREN AND PRODUCT INNOVATION

2:45 **Richard Bryant, Siddhartha Dasgupta**
LOCAL MARKETING OF CATFISH: OPPORTUNITIES FOR FARMERS’ MARKET PRODUCER-VENDORS IN KENTUCKY

3:00 **Ganesh Kumar, Carole Engle**
OPTIMAL INVESTMENT PATHWAYS FOR NEW CATFISH PRODUCTION TECHNOLOGIES

3:15 **Roy Endre Dahl**
A STUDY OF VOLATILITY IN THE AQUACULTURE MARKET USING VALUE-AT-RISK
3:30  Atle Oglend  
CLIMATE CHANGE AND THE SUSTAINABILITY OF NORWEGIAN SALMON AQUACULTURE

3:45  Ruth Pincinato, Frank Asche  
POTENTIAL EFFECTS OF CLIMATE CHANGES ON THE PRICE VOLATILITY OF SMALL PELAGIC FISH

4:00  Daniel V. Gordon  
PRICE MODELLING IN THE CANADIAN FISH SUPPLY CHAIN WITH FORECASTS AND SIMULATIONS OF THE EX-VEssel PRICE OF FISH

ZEBAFRISH - CONTINUED
Wednesday, February 24  8:30 - 6:30  Vendome A  
Chair: Bobbi Baur

FISH DISEASES – Coordinated by Dr. Michael Kent
8:30  Katy Murray  
CONTROL OF PSEUdOLOMA WITHIN ZIRC

8:45  Marcus Crim  
WHAT IS OUT THERE IN ZEBRAFISH COLONIES AND HOW DO WE DETECT IT?

9:05  Maurício Laterça Martins  
DISINFECTANT STRATEGIES FOR PSEUDOCAPILLARIA

9:25  Sean Spagnoli  
INTERACTIONS BETWEEN GAMMA IRRADIATION AND PSEUdOLOMA NEUROPHILIA INFECTION IN ADULT ZEBRAFISH

9:40  Justin Sanders  
CYTOKINE RESPONSES IN ZEBRAFISH WITH CHRONIC INFECTIONS

9:55  Michael Kent  
TRANSMISSION STUDIES INDICATE THAT INTESTINAL CANCERS IN ZEBRAFISH ARE CAUSED BY AN INFECTIOUS AGENT

10:15  BREAK

REGULATORY ISSUES FOR AQUATICS USERS – Coordinated by Monte Matthews
10:30  Monte Matthews  
OVERVIEW: REGULATORY ISSUES FOR AQUATICS USERS

10:50  Monte Matthews  
REGULATORY AND ADMINISTRATIVE BURDEN

11:00  Kathy Snell  
INTRODUCTION TO VETERINARIAN PERSPECTIVE

11:10  TBA  
INTRODUCTION TO INVESTIGATOR PERSPECTIVE

11:20  Lauren Pandolfo  
INTRODUCTION TO MANAGER PERSPECTIVE
11:30  TBA
      INTRODUCTION TO TECHNICIAN PERSPECTIVE
11:40  PANEL ADDRESSES COMMUNITY SUBMITTED ISSUES
12:30  LUNCH
KEYNOTE SPEAKER
1:30  Steve Ekker
      CURE MAPPING USING ZEBrafish
2:30  Katy Murray
      ZIRC’S NEW PROGRAM ON RESTRICTING SUBMISSION OF FISH WITH CERTAIN
      INFECTIONS
2:50  Carolyn Chang
      ZEBrafish EMBRYO DISINFECTION WITH POVIDONE IODINE: EVALUATING AN
      ALTERNATIVE TO CHLORINE BLEACH
3:10  BREAK
3:30  Ana Catarina Certal, Matheus Farias, Sandra Martins
      THE CCU FISH PLATFORM: SUPPORTING ZEBrafish RESEARCH THROUGH
      RIGOROUS HUSBANDRY AND HEALTH PROGRAMS, AND BEYOND
3:45  Stephen Watts
      FEEDING TO FOOD CONSERVATION RATIO
4:15  Christian Lawrence
      THE STATE OF LABORATORY ZEBrafish TRANSPORT: FLAWS, CHALLENGES,
      AND THE PATH TOWARDS A SENSIBLE SOLUTION
4:45  TOWN HALL MEETING

ALTERNATIVE FEEDS DEVELOPMENT
Wednesday, February 24     8:30 - 4:45     Champagne 3
Chair: Ian Forster
8:30  Ian Forster, Briony Campbell, Brad Hicks, Bruce Morton, Mahmoud Rowshandeli
      ALTERNATIVE PROTEIN SOURCES FOR JUVENILE SABLEFISH Anoplopoma fimbria
8:45  Jack Grushcow
      CAMELINA – PRODUCING A SUSTAINABLE HIGH OMEGA SOURCE FOR
      AQUAFEEDS IN NORTH AMERICA
9:00  James Schwartz, Jayme Yee, David Baston, Rafael Cuevas Uribe
      EVALUATING EFFECTS OF FISH OIL REPLACEMENT WITH ALGAL OIL
      Schizochytrium sp. IN THE DIET OF Oncorhynchus mykiss
9:15  Olaitan O. Olajuyigbe, Obasola E. Fagade
      FERMENTATION OF SHRIMP Penaeus notialis WASTE FOR USE AS SUPPLEMENT
      IN FISHFEED FORMULATION
9:30 Seong-hun Won, Seunghan Lee, Mohammad Moniruzzaman, Jun-Young Bae, Kyung-Hoon Chang, Sungchul C. Bai
EVALUATION OF VEGETABLE PROTEIN BASED INGREDIENTS AS A FISH MEAL REPLACER IN DIETS FOR JUVENILE RAINBOW TROUT *Oncorhynchus mykiss*

9:45 Muhammad Ashraf, Sajid Ali
EFFECT OF *Linum usitatissimum* AND *Sesamum indicum* EXTRACT AS GROWTH PROMOTORS IN DIETS OF FINGERLINGS OF *Ctenopharyngodon idella*

10:00 BREAK

10:30 Noor Khan, Hussain Mehdi
EFFECT OF *Moringa oleifera* MEAL ON THE GROWTH, BODY COMPOSITION AND NUTRIENT DIGESTIBILITY OF *Labeo rohita*

10:45 Aaron Watson, Justin Yost, Dan Bearden, Gibson Gaylord, Frederic Barrows, Paul Anderson, David Moore, Michael Denson
EVALUATION OF SOY PROTEIN’S EFFECTS ON LIPID METABOLISM THROUGH TARGETED QUANTITATIVE PCR IN JUVENILE RED DRUM *Sciaenops ocellatus*

11:00 Olukayode Amos Sogbesan, Taiye Michael Ekundayo
GROWTH AND BIOCHEMICAL EVALUATIONS OF *Clarias gariepinus* (BURCHELL) FED SOLID STATE FERMENTED GROUNDNUT *Arachis hypogeal* SHELL SUPPLEMENTED DIETS

11:15 Olukayode Amos Sogbesan, Deborah Oyewumi Oyebamiji
EFFECTS OF REPLACING SOYBEAN MEAL WITH MORINGA LEAF MEAL IN THE DIETS OF *Oreochromis niloticus* (LINN.)

11:30 Christianah Olaniyi, Damilola Adeniyi
EFFECT OF *Moringa oleifera* LEAF MEAL ON REPRODUCTIVE PERFORMANCE (HATCHABILITY, FECUNDITY, SPERM MOTILITY) AND SURVIVAL RATE OF AFRICAN CATFISH

11:45 Omolola Betiku, T. Gaylord, Glenn Duff, Carl Yeoman, Wendy Sealey
INCLUSION OF YEAST WITH/WITHOUT PREBIOTICS IN RAINBOW TROUT *Oncorhynchus mykiss* DIET: PARTICULAR ATTENTION ON 16S rRNA ANALYSIS

12:00 Michelle L. Walsh, Marcel Hatter
MACROALGAE AS AN ENRICHMENT FEED FOR WHITE WORMS *Enchytraeus albidus*

12:15 Alexis M. Bergman, Jesse T. Trushenski, Elizabeth A. Fairchild
CULTIVATION OF WHITE WORMS *Enchytraeus albidus* USING LOW- OR NO-COST FEED RESOURCES

12:30 LUNCH

1:30 Elizabeth Fairchild, Elizabeth Groover
EFFECTS OF FEEDS AND TEMPORAL CYCLES ON WHITE WORM *Enchytraeus albidus* PRODUCTION

1:45 Baba Usman Ibrahim, Saidu Sagri
GROWTH PERFORMANCE OF *Clarias gariepinus* FED ON EARTHWORM *Lumbricus terrestris*
2:00 Julie Schroeter, Qing Pan, Zachariah B. Conley, Scott Snyder, T. Gibson Gaylord, Wendy M. Sealey
APPARENT DIGESTIBILITY COEFFICIENTS OF AQUA-PAK™ ELITE® 70, 65 AND 60, AND PROCISION® FOR RAINBOW TROUT Oncorhynchus mykiss

2:15 Gavin Key, Cory Hungate, Thomas Clemente, Steven Weier, Neil Anthony Sims
TRANSLATING FISHMEAL REPLACEMENT RESEARCH INTO A COMMERCIAL-READY SOY-BASED FEED FOR KAMPACHI Seriola rivoliana

2:30 Chuck Roe, Melanie Rhodes, Allen Davis, Ha Van To Pham Thi, Terry Hanson, Guillaume Salze
IMPROVING SOY BASED FEED FORMULATIONS FOR THE FLORIDA POMPANO Trachinotus carolinus USING NOVEL SOY PROTEIN CONCENTRATE

2:45 Chuck Roe, Melanie Rhodes, Allen Davis, Ha Van To Pham Thi, Terry Hanson, Guillaume Salze
IMPROVING HIGH SOY FEED FORMULATIONS FOR FLORIDA POMPANO Trachinotus carolinus THROUGH PHYTASE SUPPLEMENTATION

3:00 Adiaha Ugwumba, Omonike Monebi
GROWTH AND NUTRIENT UTILIZATION OF EARTHWORM MEALS IN THE DIETS OF MUD CATFISH FINGERLINGS

3:15 Larry Feinberg
AN UPDATE ON THE ADVANCEMENT OF A NOVEL SINGLE CELL PROTEIN FOR ALTERNATIVE FEEDS IN AQUACULTURE

3:30 Thomas Wedegaertner
GOSSYPOL FREE COTTONSEED PROTEIN PROVIDES AN OPPORTUNITY TO ENHANCE THE SUSTAINABILITY OF AQUACULTURE BY REPLACING FISH MEAL – A REVIEW

3:45 Seunghan Lee, Hyeonho Yun, Youngjin Park, Seonghun Won, Doyoung Kim
EVALUATION OF THE DIETARY PROBIOTICS ISOLATED FROM GASTRO-INTESTINAL TRACT IN EEL AS THE ANTIBIOTICS REPLACER IN JAPANESE EEL Anguilla japonica

4:00 Dong-Fang Deng, Zhi Yong Ju, Cheng Seng Lee, Harry Ako
NUTRITIONAL EVALUATION ON LOCAL FEED INGREDIENTS FOR TILAPIA O. hornorum PRODUCTION IN HAWAII

4:15 Josh Silverman
FEEDKIND: AN INNOVATIVE MICROBIAL PROTEIN AS A FISHMEAL REPLACEMENT FOR AQUACULTURE
PHYSIOLOGICAL INSIGHTS TOWARDS IMPROVING FISH CULTURE IV - CONTINUED

Wednesday, February 24  8:30 - 4:45  Versailles 2
Chairs: Kurt Gamperl, Matt Rise, Brian Small, Greg Weber

9:00  Russell Borski, Jonathan D. Douros, David A. Baltzegar, Benjamin J. Reading
FUNCTION OF LEPTIN AS A CARBOHYDRATE CATABOLIC STRESS HORMONE IN FISH: INSIGHTS FROM TRANSCRIPTOMIC AND PHYSIOLOGICAL STUDIES IN THE TILAPIA

9:15  Jamie Mankiewicz, Jordan D. Taylor, Jonathan D. Douros, David A. Baltzegar, Russell J. Borski
LEPTIN REGULATION BY GLUCOSE, CATECHOLAMINES, AND GLUCOCORTICOIDS IN THE TILAPIA AND ITS IMPLICATIONS TO THE VERTEBRATE STRESS RESPONSE

9:30  Matt Vijayan, Anju Philip
STRESS-IMMUNE-GROWTH INTERACTIONS IN RAINBOW TROUT: A ROLE FOR SUPPRESSORS OF CYTOKINE SIGNALING (SOCS)

10:00  BREAK

Fish Growth and Nutrition
Moderator: Brian Small

10:30  Ronald Hardy, Andreas Brezas
BEYOND FEEDING AND WEIGHING: UTILIZING PHYSIOLOGICAL APPROACHES IN FISH NUTRITION RESEARCH

11:00  Paul Brown, Liu Bo, Amin Wang
EPIGENETICS: WHERE NATURE AND NURTURE COLLIDE

11:15  Helgi Thorarensen, Godfrey Kubiriza, Albert K. Imsland
EXPERIMENTAL DESIGN AND STATISTICAL POWER OF FISH GROWTH STUDIES

11:30  Ross Reid, Jacob Michael Froehlich, Peggy Biga
NOVEL INSIGHTS INTO MYOGENIC PRECURSOR CELL PHENOTYPES USING COMPARATIVE IN VITRO ANALYSES

11:45  Peggy Biga, Jacob Michael Froehlich, Mary Latimer, Iban Seiliez, Jean-Charles Gabillard
MODELING ATROPHY THROUGH FASTING IN AN IN VITRO SYSTEM REVEALS POSSIBLE CELLULAR SELF-RENEWAL

12:00  Beth Cleveland, Gregory Weber
EFFECTS OF SEXUAL MATURATION AND 17ß-ESTRADIOL ON NUTRIENT PARTITIONING AND MECHANISMS REGULATING GROWTH AND NUTRIENT METABOLISM IN RAINBOW TROUT Oncorhynchus mykiss

12:15  Brian Small, Julie Schroeter, Brian Peterson, Menghe Li
NPY FAMILY GENES RESPOND NEGATIVELY TO ALTERNATIVE FEEDSTUFFS IN CHANNEL CATFISH DIETS

12:30  LUNCH
1:30  Yass Kobayashi, Alexyss Leiker, Brianna Teel  
HEPATIC CHANGES IN THE EXPRESSION OF GLUCOSE TRANSPORTER (GLUT) 1 AND 2 AND TWO INSULIN RECEPTOR (IR) MRNA IN RESPONSE TO FOOD INTAKE IN CHANNEL CATFISH

1:45  Jacob Bledsoe, Brian C. Peterson, Kelly S. Swanson, Brian C. Small  
EVALUATING DIFFERENCES IN THE HOMEOSTATIC INTESTINAL MICROBIOME BETWEEN SELECTED STRAINS OF CHANNEL CATFISH Ictalurus punctatus AND BLUE CATFISH Ictalurus furcatus

2:00  Ken Overturf, Andreas Brezas, Jason Abernathy, Ronald Hardy  
INTERACTIVE EFFECTS OF DIET AND TROUT STRAIN ON THE GUT MICROBIOME OF RAINBOW TROUT

2:15  Daniel Bearden, Fabio Casu, Aaron Watson, Justin Yost, John Leffler, Gibson Gaylord, Frederic Barrows, Paul Sandifer, Michael Denson  
METABOLOMICS ANALYSIS OF EFFECTS OF FEEDS WITH VARYING SOY CONCENTRATION IN RED DRUM Sciaenops ocellatus

Fish Health and Disease  
Moderator: Matt Rise

2:30  Brian Dixon  
ANTIGEN PRESENTATION AND AQUACULTURE: WHY STUDYING MAJOR HISTOCOMpatibility GENE FUNCTION CAN LEAD TO ENHANCED FISH HEALTH

3:00  Shawna L. Semple, Nguyen T.K. Vo, Lowia Al-Hussinee, Niels Bols, John Lumsden, Brian Dixon  
UNCOVERING THE IMMUNOLOGICAL INTERACTIONS BETWEEN RAINBOW TROUT Oncorhynchus mykiss AND THE COLDWATER PATHOGEN Flavobacterium psychrophilum

3:15  Tiago Hori, Eva Jakob, Fred Kibenge, Molly Kibenge, Simon Jones, Jennifer Hall, Matthew Rise  
MICROARRAY ANALYSIS OF THE RESPONSE OF ATLANTIC SALMON Salmo salar PRIMARY HEAD KIDNEY MACROPHAGE CULTURES TO INFECTION WITH Piscirickettsia salmonis

3:30  Wendy Olson, Frederick Goetz, Graham Young  
ONTOGENY OF THE IMMUNE SYSTEM IN THE SABLEFISH Anoploma fimbria – IMPLICATIONS FOR VACCINE STRATEGIES

3:45  Marije Booman, Simon R.M. Jones, Katie L. Satchwell, Stephen A. Cochrane, Christopher T. Lohans, Brandon Findlay, Marco J. van Belkum, Lynn M. McMullen, John C. Vederas  
ACTIVITY OF PROBIOTIC Paenibacillus BACTERIA AND THEIR ANTIMICROBIALS AGAINST SALMON PATHOGENS

4:00  Peter Allen, Erin Brinkman, Wes Baumgartner, Rob DeVries, Heather Stewart, Daniel Aboagye, Shane Ramee, Michael Ciaramella, Lora Petrie-Hanson  
FIN HEALING FOLLOWING INJURY OR SAMPLING

4:15  Marije Booman, Qingheng Xu, Matthew L. Rise  
THE EFFECT OF Camelina sativa-BASED DIETS ON THE IMMUNE GENE EXPRESSION IN ATLANTIC COD AND ATLANTIC SALMON
INFLUENCE OF CAMELINA BASED DIETS ON THE ATLANTIC SALMON LIVER AND DISTAL INTESTINE TRANSCRIPTOMES

AQUACULTURE-BASED FISHERIES CONSERVATION AND ENHANCEMENTS

Wednesday, February 24  8:30 - 4:30  Concorde A
Chairs: Mike Denson, Peter Kingsley-Smith

8:30  Michael Denson, Karl Brenkert, Tanya Darden
RED DRUM STOCK ENHANCEMENT IN SOUTH CAROLINA: A 20 YEAR PERSPECTIVE

9:00  Mark Drawbridge, Michael Shane
A STATUS REPORT ON CALIFORNIA’S OCEAN RESOURCES ENHANCEMENT AND HATCHERY PROGRAM

9:15  Matthew T. Perkinson, Tanya L. Darden, Karl Brenkert IV, Michael R. Denson
CONTRIBUTION AND MOVEMENT OF HATCHERY-PRODUCED RED DRUM Sciaenops ocellatus STOCKED IN TWO SOUTH CAROLINA ESTUARIES

9:30  Ken Leber, William Halstead, Nathan Brennan, Michael Tringali, Chris Young, Ed Camp, Taryn Garlock, Kai Lorenzen
EVOLUTION OF MARINE STOCK ENHANCEMENT IN FLORIDA, USA

9:45  Karl Brenkert, Tanya Darden, Michael R. Denson, Tim O’Donnell
EXPERIMENTAL STOCKING OF HATCHERY-READED SPOTTED SEATROUT Cynoscion nebulosus IN THE CHARLESTON HARBOR ESTUARY 2012-2014

10:00 BREAK

10:30  Steve Lochmann, Greyson F. Farris
REVIEWS OF STOCK ENHANCEMENTS OF LARGEMOUTH BASS AND CRAPPIES WITH CONSIDERATION OF FACTORS AFFECTING STOCK ENHANCEMENT SUCCESS

10:45  James Barron, Ronald Twibell, Ann Gannam, Kyle Hanson
EFFECTS OF TIMING OF FIRST FEEDING ON GROWTH AND SURVIVAL OF CULTURED PACIFIC LAMPREY Entosphenus tridentatus LARVAE

11:00  Constance Silbernagel, Michael Shane, Mark Drawbridge
QUALITY CONSIDERATIONS AND SURVEILLANCE IN MARINE STOCKING PROGRAMS

11:15  Brian Beckman, Dina Spangenberg, Ryan Gerstenberger, Deb Harstad, Chris Brun, Shelly Nance, Don Larsen
EFFECT OF PRE-RELEASE GROWTH T Rainjectories ON Adult Maturation Patterns IN COLUMBIA RIVER SPRING CHINOOK SALMON

11:30  Corey N. Clarke, Dylan J. Fraser, Craig F. Purchase
EFFECTS OF CONSERVATION REARING STRATEGIES ON LIFE-LONG FITNESS FOR INNER BAY OF FUNDY ATLANTIC SALMON Salmo salar
11:45  Tom Flagg, Paul Kline  
PUTTING THE RED BACK IN REDFISH LAKE – TWENTY YEARS OF CAPTIVE BROODSTOCK PROGRESS TOWARDS SAVING THE PACIFIC NORTHWEST’S MOST ENDANGERED POPULATION OF SALMON

12:00  Paul Kline, Thomas Flagg  
IMPLEMENTATION OF BROODSTOCK MANAGEMENT SCENARIOS FOR CONSERVATION AND HARVEST – IDAHO CASE EXAMPLE

12:15  Heather Stewart, David Noakes, Carl Schreck  
FINDING YOUR WILD SIDE: PRODUCTION OF WILD-LIKE SALMONIDS

1:30  Tanya L. Darden, Michael R. Denson  
INCORPORATING POPULATION GENETICS INTO STOCK ENHANCEMENT PROGRAMS

12:30  LUNCH

2:00  Christopher Mealey, Tanya Darden, John Robinson, Michael R. Denson  
USING AN INDIVIDUAL-BASED MODEL TO PREDICT THE GENETIC IMPACTS OF STOCK ENHANCEMENT OF RED DRUM IN SOUTH CAROLINA

2:15  Rigoberto Delgado-Vega, Fabiola Lafarga-de La Cruz, Francisco J. García-de León, Carmen G. Paniagua-Chávez, Miguel Ángel del Río-Portilla  
DEVELOPMENT OF MOLECULAR MARKERS AND GENETIC DIVERSITY OF SAN PEDRO MÁRTIR TROUT Oncorhynchus mykiss nelsoni

2:30  Daniel Schill, Jeff Heindel, Matthew Campbell, Kevin Meyer, Elizabeth Mamer  
PRODUCTION OF A YY MALE BROOK TROUT BROODSTOCK FOR POTENTIAL ERADICATION OF UNDESIRED BROOK TROUT POPULATIONS

2:45  Leticia Torres, Terrence R. Tiersch  
USING AMINE REACTIVE DYES TO ESTIMATE MEMBRANE INTEGRITY IN FIXED FISH SPERM: A TOOL TO STRENGTHEN THE QUALITY CONTROL OF CRYOPRESERVATION PROTOCOLS

3:00  Matthew Gray, Philine zu Ermgassen, Emily Lemagie, Jon Gair, Jim Lerczak, Chris Langdon  
IMPROVED RESOLUTION OF FILTRATION SERVICES FROM OCEANOGRAPHIC AND PHYSIOLOGICAL STUDIES OF THE NATIVE OLYMPIA OYSTER Ostrea lurida AND THE INTRODUCED PACIFIC OYSTER Crassostrea gigas

3:15  Stephen Geiger, Sarah Stephenson  
INCREASED REGIONAL STABILITY OF BAY SCALLOPS Argopecten irradians IN SOUTHWEST FLORIDA

3:30  Kathryn E. Lohr, Joshua T. Patterson  
INTRASPECIFIC VARIATION IN PHENOTYPE AMONG NURSERY-REARED STAGHORN CORAL Acropora cervicornis

3:45  Donna Snellgrove, Tim O’Brine  
CORAL REEF REHABILITATION PROGRAM IN INDONESIA

4:00  Ramjie Odin, Delfin C. Papa, Danilo S. Josue, Luminog M. Nur  
THE MINDANAO STATE UNIVERSITY – MAGUINDANAO DEVELOPMENT PROGRAM TO RESTORE AQUASILVICULTURE FARMS AND MANGROVES
GENETIC ENGINEERING IN AQUACULTURE
Wednesday, February 24     8:30 - 3:00     Vendome B
Chairs: Yoni Zohar, John Buchanan, Dave Conley

8:30  John T. Buchanan
HISTORY OF GENETIC ENGINEERING IN AQUACULTURE

8:45  Ronald L. Stotish
AquAdvantage SALMON, SCIENCE AND SOCIETY

9:15  Dave Conley
AQUIBOUNTY’S COMMUNICATION CHALLENGE – TURNING FEAR INTO TRUST

9:30  Reginal M. Harrell
BIOETHICAL CONSIDERATIONS OF GENETIC ENGINEERING FOR AQUACULTURE

9:45  Debbie Plouffe, Dawn Runighan, John Buchanan
BROODSTOCK SELECTION FOR IMPROVED GROWTH PERFORMANCE OF TRIPLOID, GROWTH HORMONE TRANSGENIC ATLANTIC SALMON

10:00  BREAK

10:30  Rachid Ganga, Alex Peters, Matthew Bryenton, Dawn Runighan, Debbie Plouffe, John Buchanan
OPTIMIZED FEED TO IMPROVE GROWTH AND WELFARE OF TRIPLOID GROWTH HORMONE TRANSGENIC ATLANTIC SALMON Salmo salar

10:45  Berta Levavi-Sivan, Naama Mizrahi, Yaron Cohen, Matan Golan
PRODUCTION OF TRANSGENIC TILAPIA WITH GROWTH ENHANCEMENT

11:00  Nermeen Y. Abass, Rex Dunham
TRANSGENIC GROWTH HORMONE (GH) CHANNEL CATFISH: BETWEEN DREAM AND REALITY

11:15  Nermeen Y. Abass, Rex Dunham
COMPARISON OF GROWTH RATE AMONG CHANNEL CATFISH I. punctatus ♀ × BLUE CATFISH I. furcatus ♂ HYBRID, CHANNEL CATFISH, AND TRANSGENIC CHANNEL CATFISH BY cDNA GROWTH HORMONE (GH) CHANNEL CATFISH

11:30  Rosalind A. Leggatt, Robert H. Devlin
IDENTIFYING UNCERTAINTY IN ASSESSING FITNESS COMPONENTS OF GROWTH HORMONE TRANSGENIC COHO SALMON: A MARINE EXAMPLE

11:45  Raman Sood, Blake Carrington, Kevin Bishop, Gaurav Varshney, MaryPat Jones, Shawn Burgess, Paul Liu
USE OF GENOME-EDITING NUCLEASES, PARTICULARLY CRISPR/CAS9 FOR HIGH THROUGHPUT MUTAGENESIS IN ZEBRAFISH

12:00  Anna Wargelius, Fernando Ayllon, Erik Kjærner-Semb, Sven Leininger, Lene Kleppe, Kai Ove Skaftnesmo, Tomasz Furrmanek, Vidar Wennevik, Monica F. Solberg, Geir Dahle, Kevin A. Glover, Markus Sellman-Almen, Carl Johan Rubin, Geir Lasse Taranger, Rüdiger W. Schulz, Helge Tveiten, Geir Lasse Taranger, Eva Andresson, Rolf B. Edvardsen
GWAS AND FUNCTIONAL STUDIES REVEAL GENETICS BEHIND REPRODUCTIVE TRAITS IN ATLANTIC SALMON Salmo salar L.
12:30 LUNCH

1:30 Yonathan Zohar, Olivia Spicer, Miranda Marvel, Nilli Zmora, Ten-Tsao Wong
ELIMINATING REPRODUCTIVE GENES: A GOOD APPROACH TO STERILITY IN FISH?

2:00 Ten-Tsao Wong, Yonathan Zohar
A NOVEL APPROACH TO GENETIC-CONTAINMENT: PRODUCING STERILE FISH BY DISRUPTING PRIMORDIAL GERM CELL DEVELOPMENT

2:15 Xavier Lauth, E Hu, Tuong Tran, Takeshi Umazume, John Buchanan, Ronald Stotish
MATERNALLY-INDUCED STERILITY IN FISH

2:30 Rex A. Dunham
GENE TRANSFER AND GENE EDITING FOR REVERSIBLE STERILIZATION OF CATFISH

2:45 Shaojun Liu
THE GENERATION OF THE FERTILE DIPLOID AND TETRAPLOID FISH LINAGES DERIVED FROM DISTANT HYBRIDIZATION

MUSSELS
Wednesday, February 24 10:30 - 12:30 Loire
Chair: Rebecca Smith

10:30 Scott Lindell, David Bailey
HATCHERY TECHNOLOGY DEVELOPMENTS TO SUPPORT FARMING NORTHEASTERN U.S. BLUE MUSSELS Mytilus edulis

10:45 Rebecca Smith, Andrew Jeffs
ASSESSING THE COMMERCIAL POTENTIAL OF SPAT COLLECTION OF GREENSHELL™ MUSSELS IN THE HAURAKI GULF, NEW ZEALAND

11:00 Lewis E. Deaton
EFFECTS OF BIOGENIC AMINES ON THE ISOLATED VENTRICLE OF THE ATLANTIC RIBBED MUSSEL Geukensia demissa

11:15 Norman L.C. Ragg, Zoë Hilton, Ellie Watts, Jolene Taylor, Jonathan Morrish, Kevin Heasman, Nick King
ENERGETICS PARAMETERS APPLIED TO FAMILY SELECTION IN A GREENSHELL MUSSEL Perna canaliculus BREEDING PROGRAMME
IMTA AND INTEGRATED AQUACULTURE
Wednesday, February 24     10:30 - 4:30     Champagne 2
Chairs: Shawn Robinson, Thierry Chopin

10:30  Thierry Chopin
THE CANADIAN INTEGRATED MULTI-TROPHIC AQUACULTURE NETWORK (CIMTAN): 2010-2016 – WHAT HAVE WE LEARNED?

11:00  Shawn Robinson, Keng Pee Ang, Gregor Reid, Andrew Cooper, Terralynn Lander, Bruce MacDonald, Hannah Bradford, Kurt Simmons, Emily Nelson, Taryn Minch, Thierry Chopin
EVALUATION OF THE VARIOUS ORGANIC NICHES IN INTEGRATED MULTI-TROPHIC AQUACULTURE (IMTA) FROM THE CANADIAN EAST COAST

11:15  Bruce MacDonald, Shawn M.C. Robinson, Christopher M. Pearce, Kurt Simmons, Emily J. Nelson, Gregor K. Reid, Daniel L. Curtis, Lindsay C. Orr, Lucie Hannah, Helen Gurney-Smith, Stephen F. Cross
ASSESSING THE SUITABILITY OF SUSPENSION- AND DEPOSIT-FEEDING SEA CUCUMBERS AS EXTRACTORS OF PARTICULATES IN INTEGRATED MULTI-TROPHIC AQUACULTURE (IMTA)

11:30  Angela Fortune, Christopher M. Pearce, Mica Verbrugge, Stephen F. Cross
INTEGRATED MULTI-TROPHIC AQUACULTURE (IMTA) WITH THE CALIFORNIA SEA CUCUMBER Parastichopus californicus: UTILIZING ANIMAL BEHAVIOUR AND CAGE DESIGN TO OPTIMIZE IMTA SYSTEM EFFICIENCY

11:45  Stacy Murray, Thierry Chopin, Hamid Khoda Bakhsh, Miko Leavitt
INTEGRATED MULTI-TROPHIC AQUACULTURE (FIMTA): DEVELOPING AQUAPONICS FOR COLD TEMPERATE COMMERCIAL ATLANTIC SALMON Salmo salar HATCHERY SYSTEMS AND INVESTIGATING THE USE OF IMTA KELP BIOCHAR AS A PLANT SUBSTRATE

12:00  Adam Turner, Tiger Jeans, Gregor Reid
EXPERIMENTAL INVESTIGATION OF CANADIAN FISH FARM HYDRODYNAMIC WAKE PROPERTIES AND ITS IMPLICATIONS FOR INTEGRATED MULTI-TROPHIC AQUACULTURE (IMTA)

12:15  Taryn Minch, Shawn M.C. Robinson, Bruce MacDonald, Gregor Reid, Keng P. Ang
HIGH RESOLUTION MEASURES OF CURRENT FLOWS AROUND SALMON CAGES TO GUIDE THE PLACEMENT OF EXTRACTIVE SPECIES FOR INTEGRATED MULTI-TROPHIC AQUACULTURE

12:30  LUNCH

ECONOMICS OF INTEGRATED MULTI-TROPHIC AQUACULTURE ADOPTION IN CANADA: AN OVERVIEW

1:45   Erin Latham, M. Flaherty, S. Cross, C. Pearce, T. Chopin
MAKING LINKAGES: EXPLORING THE FUTURE OF AQUACULTURE AND THE POTENTIAL OF INTEGRATED MULTI-TROPHIC AQUACULTURE (IMTA) IN BRITISH COLUMBIA
2:00  Karen E. Jensen, J. Christopher Taylor, Robert J. Barry, Mickie L. Powell, D. Allen Davis, Stephen A. Watts  
WEIGHT GAIN OF THE SHRIMP Litopenaeus vannamei IS ENHANCED BY CONSUMPTION OF SEA URCHIN EGESTA

2:15  Muki Shpigel, David Ben-Ezra, Vladimir Odnietzov, Lilach Shauli  
EUROPEAN SEA URCHIN Paracentrotus lividus AS A PART OF IMTA SYSTEM

2:30  Andrew Suhrbier, Daniel Cheney, Ryan Crim, Lorenz Hauser, Brent Vadoplas, Henry Carson, Jeff Hetrick  
DEVELOPMENT OF RED SEA CUCUMBER Parastichopus californicus POLY-AQUACULTURE FOR NUTRIENT UPTAKE AND SEAFOOD EXPORT

2:45  John Scarpa, Paul S. Wills, Madelyn E. Russell, Christopher Robinson, Richard Baptiste  
FURTHER OPTIMIZATION OF Isochrysis sp. (CLONE C-ISO) CULTURE FOR A LAND-BASED INTEGRATED MULTI-TROPHIC AQUACULTURE SYSTEM

3:15  Graham Mair, Sam Davies, Ben Crowe, James Harris  
WORM FARMING IN SOUTH AUSTRALIA – Perinereis vallata SEEMS TO HAVE IT ALL?

3:30  Ricardo Radulovich, José Pablo Fuentes  
WHITE SHRIMP Litopenaeus vannamei PRODUCTION IN FLOATING CAGES AT SEA AND POLYCULTURE WITH PACIFIC OYSTER Crassostrea gigas

3:45  DISCUSSION

EFFECTS OF THE REGULATORY ENVIRONMENT ON AQUACULTURE  
Wednesday, February 24  10:30 - 4:30  Concorde B  
Chair: Carole R. Engle

10:30  George Lockwood  
HISTORICAL PERSPECTIVE ON REGULATORY ENVIRONMENT IN THE U.S.

11:00  Jamie Anderson  
THE U.S. BAITFISH INDUSTRY: EFFECTS OF REGULATIONS

11:30  Richard Smith  
WHY PROPERTY RIGHTS ARE ESSENTIAL IN DEVELOPMENT OF MARINE AQUACULTURE

12:00  Randy MacMillan  
THE U.S. TROUT INDUSTRY: EFFECTS OF REGULATIONS

12:30  LUNCH

1:30  Bill Dewey  
THE WEST COAST SHELLFISH INDUSTRY: EFFECTS OF REGULATIONS

2:00  Jonathan van Senten, Carole Engle  
THE COSTS OF FISH HEALTH TESTING REGULATIONS ON U.S. PRODUCERS OF BAITFISH AND SPORTFISH
2:00  Jonathan van Senten  
COSTS OF REGULATIONS ON THE U.S. BAITFISH/SPORTFISH INDUSTRY: RESULTS OF A NATIONAL SURVEY

2:30  Frank Asche  
THE REGULATORY ENVIRONMENT IN NORWAY CONTRASTED WITH THE U.S.

3:00  Bertrand le Gallic  
MEASURING THE ECONOMIC EFFECTS OF REGULATIONS ON AQUACULTURE IN THE EU

**ALTERNATIVE MODELS FOR INTERNATIONAL TRADE**

Wednesday, February 24     1:30 - 3:30     Concorde C  
Chairs: Christa Speekmann, Sarah Thompson

1:30  Christa Speekmann

1:45  Scott Squires

2:00  Sarah Thompson

2:15  PANEL DISCUSSION  
Moderator: Myron Kebus

**SHELLFISH CONTRIBUTED**

Wednesday, February 24     1:30 - 4:30     Loire  
Chair: Andrew Jeffs

1:30  James Morris, Kenneth Riley, Christine Voss  
INTERACTIONS BETWEEN SHELLFISH AQUACULTURE AND SUBMERGED AQUATIC VEGETATION (SAV): A STATE OF SCIENCE ASSESSMENT TO INFORM HABITAT EQUIVALENCY AND MORE

1:45  Marlene Meaders, Chris Cziesla, Phil Bloch, Grant Novak, Ruth Park  
BEYOND ACRES AND TURIONS: IMPROVING METRICS FOR EELGRASS MITIGATION

2:00  Marlene Meaders, Kerrie McArthur  
EELGRASS DELINEATION METHODS AND SHELLFISH AQUACULTURE: WHY SCALE AND EFFECT ARE IMPORTANT CONSIDERATIONS

2:15  Philip Staudigel, Carolyn Friedman, Maya Groner, Colleen Burge, John Bucci  
CAN EELGRASS MITIGATE THE EFFECTS OF OCEAN ACIDIFICATION ON OYSTER HEALTH? A STABLE ISOTOPE APPROACH

2:30  Bobbi Hudson, Thom Allen, Danna Moore, Andrew Suhrbier, Hannah Faulkner  
PHYSICAL AND SOCIAL DIMENSIONS OF SHELLFISH AQUACULTURE ON THE U.S. WEST COAST
2:45 Fred Conte, Abbas Ahmadi
GROUND-TRUTHING THE SHELLFISH SANITATION MODEL PEARL: USING PUBLIC HEALTH SANITATION DATASETS FROM PACIFIC, GULF, AND ATLANTIC STATES OF THE UNITED STATES

3:00 Jonathan Davis, Kristin Saksa
DEVELOPMENTS IN THE COMMERCIALIZATION OF PURPLE-HINGE ROCK SCALLOP AQUACULTURE Crassadoma giganteus

3:15 Andrew Jeffs, Jenni Stanley, Serena Wilkens, Hamish McDonald
COMPLEX SOUNDS BENEFITS SHELLFISH PRODUCTION

3:30 Mariel Gullian Klanian, Montserrat Terrats Preciat, Elma C. Pech Jiménez
EFFECT OF FROZEN STORAGE ON PROTEIN DENATURATION AND FATTY ACIDS PROFILE OF THE RED OCTOPUS Octopus maya

3:45 Christopher Schillaci, Marian Litvaitis, Joseph Salisbury, Greg Bettencourt
A COMPARISON OF CALCIUM CARBONATE SEDIMENT BUFFERS TO INCREASE THE LARVAL SETTLEMENT OF THE SOFT SHELL CLAM Mya arenaria

4:00 Yongwen Gao
STABLE ISOTOPE ANALYSIS AND THE EFFECTS OF OCEAN ACIDIFICATION FROM SCALLOP SHELLS

TRIDACNA
Wednesday, February 24 1:30 - 4:30 Bordeaux
Chair: Miguel Mies

1:30 James Fatherree
ON THE BIOLOGY AND MARICULTURE OF GIANT CLAMS

2:00 Shane Penny
GIANT CLAMS IN THE NORTHERN TERRITORY, AUSTRALIA

2:15 Maria Rio Naguit
MARICULTURE AND RESTOCKING OF GIANT CLAMS: INDONESIA AND PHILIPPINE EXPERIENCE

2:30 Miguel Mies, Paulo Sumida
PRODUCTION OF SYMBIOSIS-SPECIFIC FATTY ACIDS BY DIFFERENT Symbiodinium CLADES ASSOCIATED WITH Tridacna crocea LARVAE

2:45 Yuen K. Ip, Kum C. Hiong, Enan J. K. Goh, Anh H. Cao-Pham, Celine Y. L. Choo, Wai P. Wong, Shit F. Chew
THE FUNCTIONS OF CTENIDIA IN LIGHT-ENHANCED CALCIFICATION IN Tridacna squamosa

3:00 Shit F. Chew, Kum C. Hiong, Celine Y. L. Choo, Mel V. Boo, Biyun Ching, Wai P. Wong, Yuen K. Ip
THE FATE OF PROTON IN THE EXTRAPALLIAL FLUID AND INNER MANTLE OF Tridacna squamosa DURING LIGHT-ENHANCED CALCIFICATION
WEDNESDAY

VIBRIO
Wednesday, February 24     1:30 - 3:30     Burgundy
Chairs: Steve Jones, Cheryl Whistler

1:30 Cheryl Whistler, Feng Xu, Ashley Marcinkiewicz, Jeffrey Hall, Kevin Drees, Malachi Halee, Vaughn Cooper, Stephen Jones
KNOW THY ENEMY: HOW ANALYSIS OF THE NORTHEASTERN PATHOGENIC POPULATION OF Vibrio parahaemolyticus CAN IMPROVE PATHOGEN IDENTIFICATION AND RISK ASSESSMENT

1:45 Narjol Gonzalez-Escalona, Jessica Jones, Robert Myers, Clifford Mitchell, Erin Butler, Magaly Toro, Julie Haendiges
A NON-AUTOCHTHONOUS US STRAIN OF Vibrio parahaemolyticus ISOLATED FROM CHESAPEAKE BAY OYSTERS CAUSED THE OUTBREAK IN MARYLAND IN 2010

2:00 Christopher Schillaci, Diane Regan, Eric Hickey
Vibrio parahaemolyticus MANAGEMENT FOR OYSTERS IN MASSACHUSETTS

2:15 Clara H. Hard, Laura W. Johnson
NEW PREVENTATIVE APPROACH TO LOWER RISK OF Vibrio parahaemolyticus ILLNESSES IN WASHINGTON

2:30 Kristin DeRosia-Banick, Michael Whitney, David Carey, Joseph Decrescenzo
CONNECTICUT’S RESPONSE TO THE MANAGEMENT OF PATHOGENIC Vibrio parahaemolyticus

2:45 Anita Wright, Lei Fang, Ying Fan, Tiffiani Onifade, Jennifer Harper, Valerie Harwood, Andrew Kâne
DISTRIBUTION AND CHARACTERIZATION OF Vibrio cholerae IN APALACHICOLA BAY, FLORIDA

3:00 Joey Marchant-Tambone, Thomas P. Kindsey, Stephanie M. Grodeska, Joshua Kling, Whitney Jaillet, Jessica L. Jones
THE EFFECTS OF HARVESTING AND HANDLING PRACTICES OF OYSTER ON Vibrio parahaemolyticus

3:15 Steve Jones, Erin Urquhart, Meghan Hartwick, Cheryl Whistler, Vaughn Cooper
EMPIRICAL MODELING OF Vibrio parahaemolyticus CONCENTRATIONS AT THE ESTUARY SCALE
THURSDAY, February 25

INFLUENCE OF ACTIVISTS AND MEDIA INNOVATION IN AQUACULTURE PRODUCTION
Thursday, February 25  8:30 - 10:00  Burgundy
Chair: Dave Conley

8:30  Dave Conley
AQUABOUNTY’S AQUADVANTAGE SALMON – A PROLONGED JOURNEY TO MARKET: HOW INNOVATION WAS IMPEDED BY ACTIVISTS AND MEDIA FEAR-MONGERING

8:45  Brad Hicks
MISINFORMATION AND DECEIT MASQUERADING AS SCIENCE IS BRINGING AN END TO THE INFLUENCE OF ACTIVISTS ON AQUACULTURE INNOVATION AND DEVELOPMENT

9:00  Ian Bricknell
“THAT’S BECAUSE YOU’RE AN EVIL AQUACULTURE SCIENTIST”…

9:15  Martin O’Farrell, Robin McKimm, Carl Burger
THE “HUMANE FISH HARVESTER” – AN INNOVATIVE TECHNOLOGY DESIGNED FOR THE HUMANE SLAUGHTER OF FARMED FISH AT AQUACULTURE FACILITIES

9:30  Stephen F. Cross
PERCEPTION – THE REALITY THAT DRIVES AQUACULTURE INNOVATION IN COASTAL BRITISH COLUMBIA, CANADA

9:45  Neil Anthony Sims, Gavin Key
ANTI-AQUACULTURE ACTIVISM: A TERMINAL AFFLICTION, OR A CURABLE ILL?

ECONOMICS AND MARKETING - CONTINUED
Thursday, February 25  8:30 - 12:30  Versailles 3
Chair: Frank Ashe

8:30  Mohammad Hasan, Madan Dey
FORECASTING MONTHLY U.S. FARM-RAISED CATFISH Ictalurus punctatus POND BANK FISH PRICE AND FEED PRICE

8:45  Isaac Ankamah-Yeboah, Julia Bronnmann, Max Nielsen
MARKET INTEGRATION BETWEEN FARMED AND WILD FISH: EVIDENCE FROM THE WHITEFISH MARKET IN GERMANY

9:00  Jose Fernandez Polanco, Ignacio Llorente, Ladislao Luna
PRICE INTEGRATION ALONG THE SPANISH GILTHEAD SEABREAM Sparus aurata VALUE CHAIN

9:15  Huiqiang Wang, Madan Dey
A FRAMEWORK FOR PREDICTING U.S. CATFISH PRICES: THE LEADING INDICATORS APPROACH
9:30  Hans-Martin Straume, Frank Asche, Erling Vårdal  
TRADE DURATION FOR SEAFOOD

9:45  Dengjun Zhang, Frank Asche, Jinghua Xie  
EXPORT COMPOSITION AND MARKET POWER: THE CASE OF SALMON

10:00  BREAK

11:00  Akua Akuffo, Kwamena Quagrainie  
DOES TECHNICAL SUPPORT HELP TO IMPROVE FOOD SECURITY? A CASE STUDY OF TANZANIAN FISH FARMING HOUSEHOLDS

11:15  Bernadette T. Fregene, Peace Okoh  
GENDER PARTICIPATION IN AQUACULTURE VALUE CHAIN IN DELTA STATE, NIGERIA

11:30  Cortney Ohs, Audrey Beany  
EVALUATION OF MARKET SIZE AND POTENTIAL FOR AQUACULTURE PRODUCED MARINE BAIT SHRIMP IN FLORIDA VIA A RETAILER SURVEY

11:45  Daniel Taylor, David Kuhn, Terrill Hanson, Laura Lawson  
PROTOCOLS AND MARKET OPPORTUNITIES FOR SHIPPING LIVE SHRIMP IN WATERLESS CONDITIONS

12:00  Yang Han  
AQUATIC-PRODUCTS QUALITY AND SAFETY: CHINESE AQUATIC PRODUCERS’ ATTITUDES AND BEHAVIOR

MARINE AQUACULTURE AND SPATIAL PLANNING – PRINCIPLES, PERSPECTIVES AND OPPORTUNITIES
Thursday, February 25  8:30 – 3:00  Vendome A
Chairs: Kenneth Riley, José Aguilar-Manjarrez

9:00  Jose Aguilar Manjarrez, Doris Soto, Randall Brummett  
AQUACULTURE ZONING, SITE SELECTION AND AREA MANAGEMENT UNDER THE ECOSYSTEM APPROACH TO AQUACULTURE

9:15  Kenneth D. Black  
AQUASPACE – ECOSYSTEM APPROACH TO MAKING SPACE FOR SUSTAINABLE AQUACULTURE

9:30  Will McClintock  
GEODESIGN AND AQUACULTURE ZONING IN THE CONTEXT OF MARINE SPATIAL PLANNING: SEASKETCH IN NEW ZEALAND

9:45  Roberto Mayerle, Katharina Niederndorfer, Ketut Sugama  
SPATIAL PLANNING OF COASTAL CAGE AQUACULTURE IN INDONESIA BASED ON SIMULATION MODELS

10:00  BREAK
11:00  Rebecca Gentry, J.M. Stevens, C.V. Kappel, T.W. Bell, C.C. Maue, S.D. Gaines, C. White, S.E. Lester  
SPATIAL PLANNING FOR OFFSHORE AQUACULTURE IN THE SOUTHERN CALIFORNIA BIGHT: BALANCING MULTIPLE OBJECTIVES TO ACHIEVE SUSTAINABLE DEVELOPMENT AND ECOSYSTEM HEALTH

11:15  Michael Parke  
THE PACIFIC ISLANDS SCIENCE CENTER MARINE MAPPER, AN ON-LINE SPATIAL DECISION SUPPORT TOOL FOR THE U.S. PACIFIC ISLANDS MARINE PLANNING

11:30  Kenneth Riley, Lisa Wickliffe, James Morris  
A GEOSPATIAL DECISION SUPPORT TOOL FOR AQUACULTURE IN THE GULF OF MEXICO

11:45  Lisa Wickliffe, Kenneth Riley, James Morris  
MAXIMIZING THE VALUE OF OFFSHORE SPACE: USING THE GULF AQUAMAPPER AND GEOPLANNER FOR AQUACULTURE SITE SELECTION IN THE GULF OF MEXICO

12:00  Øivind Strand, Junyong You, Anne A. Hageberg, Aline Gangnery, Cedric Bacher, Baisong Chen, Jianguang Fang  
A WEB BASED DECISION SUPPORT SYSTEM FOR AQUACULTURE SITING AND MANAGEMENT

12:30  LUNCH

1:30  Tessa Getchis, Cary Chadwick, Kristin DeRosia-Banick  
MAPS MATTER FOR MARINE AQUACULTURE

1:45  Kenny Black, Alexander Murray, Matt Gubbins  
SPATIAL TOOLS TO MANAGE SUSTAINABLE AQUACULTURE IN SCOTLAND: GOVERNMENT AND INDUSTRY

2:15  DISCUSSION

STUDENT SESSION:
AQUACULTURE CAREER DEVELOPMENT AND ADVICE  
Thursday, February 25   8:30 - 12:30   Champagne 2  
Chairs: Jonathan van Senten, Evan Durland

8:30  Carl Kittel  
CARREER DEVELOPMENT AND CARREER OPPORTUNITIES IN AQUACULTURE

8:45  Jonathan van Senten  
OPPORTUNITIES FOR GRAD STUDENTS TO MAXIMIZE THEIR RESUME

9:00  Carole Engle  
PREPARING FOR AN ACADEMIC CAREER IN AQUACULTURE

9:15  Rosie Trice  
AUTHORSHIP (WILEY-BLACKWELL PUBLISHING)
THURSDAY

9:30   Nicole Rhody
EXPERIENCES OF WORKING FOR A NON-PROFIT RESEARCH FACILITY

9:45   Huy Tran
KEEPING AQUACULTURE “NEW” FOR OVER 28 YEARS

10:00  BREAK

11:00  Bob Robinson
AQUACULTURE SALES AS A CAREER

11:15  Michael R. Denson
OPPORTUNITIES FOR EMPLOYMENT IN STATE GOVERNMENT: A SOUTH CAROLINA PERSPECTIVE ON AQUACULTURE RESEARCH AND GETTING HIRED IN TODAY'S EMPLOYMENT MARKET

11:30  Bradley Todd
FROM MARINE CORPS TO FARM MANAGER, QUITE A JOURNEY

11:45  John Ewart
WORLD AQUACULTURE SOCIETY EMPLOYMENT SERVICE

12:00  Mike Freeze
FROM IGNORANCE TO SUCCESS: A THIRTY YEAR JOURNEY THROUGH THE PITFALLS OF AQUACULTURE

12:15  DISCUSSION

WORKGROUP TO ESTABLISH CODE OF CONDUCT
Thursday, February 25     8:30 - 12:30     Concorde C
Chair: Pat Mazik

8:30   Patricia (Pat) Mazik, Reginal M. Harrell
CREATING A DRAFT CODE OF CONDUCT

With the growing dependence on aquaculture as a global supplier of seafood and aquaculture products for consumptive, recreational, or restoration purposes ethical conflicts between producers and the general public are inevitable. The increased visibility of aquaculture on global basis requires producers, suppliers, scientists, educators, managers and regulators to proactively and responsibly understand and appropriately respond to perceived ethical issues associated with the discipline. Ethical challenges that aquaculture and fisheries management face revolve around environmental sustainability, animal welfare, responsible conduct in research, stock enhancement and restoration, genetic manipulation and management, plant and animal health and well-being, and social and regulatory concerns.

This workgroup will frame the issue from a responsible, proactive perspective with the goal of creating a draft code of conduct. Participants will help draft the code of conduct and will be charged with addressing both concerns and opportunities while offering suggestions on how to avoid or minimize ethical challenges within their specific focus discussion.
OMICS TOOLS FOR AQUACULTURE
Thursday, February 25  8:30 - 12:30  Versailles 2
Chairs: Eric Saillant, Eric Peatman

8:30  Eric A. Saillant, Adrienne Norrell, Kenneth L. Jones
GENOMIC TOOLS FOR THE MANAGEMENT OF RED SNAPPER AQUACULTURE AND STOCK ENHANCEMENT

8:45  Christopher M. Hollenbeck, Shannon J. O'Leary, David S. Portnoy, John R. Gold
DEVELOPMENT OF GENOMIC RESOURCES FOR COMMERCIAL AND RESTORATION AQUACULTURE OF RED DRUM AND SOUTHERN FLOUNDER

9:00  Geoffrey Waldbieser, Brian Bosworth
UTILIZATION OF THE CHANNEL CATFISH GENOME ASSEMBLY IN A SELECTIVE BREEDING PROGRAM

THE PERFORMANCE OF OYSTER FAMILIES EXPOSED TO DERMO DISEASE IS CONTINGENT ON THE SOURCE OF PATHOGEN EXPOSURE

9:30  Wei Xu
GENOMIC ADAPTATION OF SHELLFISH LARVAL DEVELOPMENT AND HOST DEFENSE TO STRESS OF OCEAN ACIDIFICATION

9:45  Eric Peatman, Dongdong Zhang, Wilawan Thongda, Benjamin Beck, Haitham Mohammed, Covadonga Arias
MORE THAN JUST ANTIBODIES: PROTECTIVE MECHANISMS OF A MUCOSAL VACCINE AGAINST FISH PATHOGEN Flavobacterium columnare

10:00 BREAK

11:00  Benjamin Beck, S. Adam Fuller, Chao Li, Bartholomew W. Green, Steven D. Rawles, Carl D. Webster, Eric Peatman
HEPATIC TRANSCRIPTOMIC AND METABOLIC RESPONSES OF HYBRID STRIPED BASS TO ACUTE AND CHRONIC HYPOXIC INSULT

11:15  Tiago Hori, Debbie Plouffe, John Buchanan, Mark Fast
RNA-SEQ ANALYSIS OF THE ATLANTIC STURGEON GILL RESPONSE TO THE “STURGEON-LOUSE” Dichelesthium oblongum

11:30  Andrea C. Alfaro, Tim Young
METABOLOMICS: AN INNOVATIVE AND POWERFUL TOOL FOR AQUACULTURE

11:45  Daniel Bearden, Fabio Casu, Carl Yeoman, Gibson Gaylord, Fredrick Barrows, Matthew Powell, Justin Yost, Aaron Watson, Paul Sandifer, Michael Denson
NMR-BASED METABOLOMICS FOR FINFISH FEED STUDIES

12:00  Fabio Casu, Daniel Bearden, Aaron Watson, Justin Yost, John Leffler, Gibson Gaylord, Frederic Barrows, Paul Sandifer, Michael Denson
METABOLOMICS ANALYSIS OF EFFECTS OF COMMERCIAL SOY-BASED PROTEIN PRODUCTS IN RED DRUM Sciaenops ocellatus
THURSDAY

SHELLFISH INITIATIVE
Thursday, February 25     8:30 - 12:30     Loire
Chair: Tessa Getchis

8:30  Michael C. Rubino
THE NOAA NATIONAL SHELLFISH INITIATIVE: BUILDING PARTNERSHIPS TO
MAXIMIZE THE ECOLOGICAL AND ECONOMIC BENEFITS OF SHELLFISH

8:45  Julie Decker
THE ALASKA MARICULTURE INITIATIVE: CREATION OF A STRATEGIC PLAN TO
GROW A $1 BILLION INDUSTRY IN 30 YEARS

9:00  Laura K. Hoberecht, Julie Horowitz
MORE TO DO!  PHASE II OF THE WASHINGTON SHELLFISH INITIATIVE

9:15  Kessina Lee
THE OREGON SHELLFISH INITIATIVE: AN UPDATE AND THE PATH FORWARD

9:30  Diane Windham
STATE AND REGIONAL SHELLFISH INITIATIVES – THE CALIFORNIA SHELLFISH
INITIATIVE

9:45  Jamie Miller, William Walton
UPDATE ON OYSTER MANAGEMENT IN MISSISSIPPI

10:00 BREAK

11:00 William C. Walton
UPDATES AND OUTLOOK FOR THE GULF OF MEXICO SHELLFISH INITIATIVE

11:15 Donald Webster
MARYLAND INITIATIVES TO ADVANCE SHELLFISH AQUACULTURE: STRATEGIES
FOR ATTRACTING INVESTMENT FOR PROFITABLE DEVELOPMENT

11:30 Tessa Getchis, Julie Rose, Nancy Balcom, Anoushka Concepcion, Sylvain De Guise
CONNECTICUT INITIATIVES TO GROW SHELLFISH AQUACULTURE, FISHERIES
AND NATURAL RESOURCES

11:45 Azure Cygler, Jennifer McCann, Dale Leavitt, David Beutel, Jeffrey Mercer,
Monique LaFrance Bartley
THE RHODE ISLAND SHELLFISH MANAGEMENT PLAN: A MODEL FOR
STAKEHOLDER PARTICIPATION AND INDUSTRY-AGENCY COLLABORATION

12:00 DISCUSSION
## AQUACULTURE IN CALIFORNIA:
### YESTERDAY, TODAY, AND BEYOND
Thursday, February 25 8:30 - 12:30  Concorde A
Chair: Tony Schuur

<table>
<thead>
<tr>
<th>Time</th>
<th>Presenter</th>
<th>Topic</th>
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<tr>
<td>8:30</td>
<td>Lauren Bernadett, Tony Schuur</td>
<td>THE REGULATORY ENVIRONMENT</td>
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<td>9:00</td>
<td>Mark Drawbridge</td>
<td>MARINE FINFISH AQUACULTURE</td>
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<td>9:15</td>
<td>Paul Olin</td>
<td>ACADEMIC SUPPORT FOR AQUACULTURE – SHRINKING OR SURGING?</td>
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<tr>
<td>9:30</td>
<td>Paul Olin</td>
<td>EDUCATIONAL OPPORTUNITIES IN AQUACULTURE</td>
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<td>9:45</td>
<td>Tony Vaught</td>
<td>INLAND AQUACULTURE OVERVIEW AND ITS TIES TO EMERGING OFFSHORE FARMS: FRESHWATER FARMS, HATCHERIES FOR OFFSHORE PRODUCTION, AND AQUAPONICS</td>
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<td>10:00</td>
<td>Break</td>
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<td>11:00</td>
<td>Tony Vaught</td>
<td>FISHERMEN’S MARKETS: THE CALIFORNIA LEGISLATURE INCLUDES AQUACULTURE IN THE TRADITIONAL COASTAL MARKETPLACE</td>
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<td>11:15</td>
<td>Tony Schuur</td>
<td>GEOTHERMAL AQUACULTURE</td>
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<td>11:30</td>
<td>Jerry Schubel</td>
<td>PUBLIC PERCEPTION AND EDUCATION ABOUT FARMED SEAFOOD</td>
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<td>12:00</td>
<td>OPEN Q&amp;A WITH CALIFORNIA AQUACULTURE ASSOCIATION SPEAKERS PANEL</td>
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## COMMERCIAL AQUACULTURE HEALTH PROGRAM STANDARDS (CAHPS)
Thursday, February 25 8:30 - 10:00  Concorde B
Chair: Deborah Millis

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<thead>
<tr>
<th>Time</th>
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<tr>
<td>8:30</td>
<td>Randy MacMillan</td>
<td>CAHPS – WHERE ARE WE NOW?</td>
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<td>9:00</td>
<td>Kathleen Hartman</td>
<td>CAHPS OVER THE LAST YEAR</td>
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<td>9:30</td>
<td>Kathleen Hartman</td>
<td>CAHPS – WHAT’S NEXT?</td>
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SHRIMP PRODUCTION AND BIOFLOC
Thursday, February 25     8:30 - 5:00     Champagne 1
Chair: Wilson Wasielesky

8:30 Darryl E. Jory
THE GLOBAL SHRIMP FARMING INDUSTRY: STATUS, CHALLENGES AND
PERSPECTIVES

9:00 Nyan Taw
INTENSIVE SHRIMP FARMING: FARM BIOSECURITY AND BIOFLOC TECHNOLOGY
FOR SUSTAINABLE PRODUCTION AND DISEASE PREVENTION AND CONTROL

9:15 Tzachi Samocha, David I. Prangnell, Terrill R. Hanson, Granvil D. Treece,
Leandro F. Castro, Timothy C. Morris, Nick Staresinic
DESIGN AND OPERATION OF INDOOR NO WATER EXCHANGE SUPER-INTENSIVE
BIOFLOC-DOMINATED SYSTEMS FOR PRODUCING PACIFIC WHITE SHRIMP:
THE MANUAL

9:30 Terrill Hanson, Tzachi Samocha, David Prangnell, Granvil Treece, Leandro Castro,
Timothy Morris, Nick Staresinic
ECONOMICS OF SUPER-INTENSIVE RECIRCULATING SHRIMP PRODUCTION
SYSTEMS: THE MANUAL

9:45 Andrew Ray, Adam Cecil, William Auberry
INDOOR MARINE SHRIMP PRODUCTION AT KENTUCKY STATE UNIVERSITY

10:00 BREAK

11:00 Meenakshisundaram Menaga, S. Felix Sugantham
DEVELOPMENT OF FLOC CONCENTRATE IN THE NURSERY CULTURE OF
Litopenaeus vannamei UNDER AEROBIC MICROBIAL FLOC DRIVEN RACEWAYS
AND LINED PONDS

11:15 David I. Prangnell, Leandro F. Castro, Abdulmehdi S. Ali, Thomas R. Zeigler,
Craig L. Browdy, Tim A. Markey, Darrin Honious, Tzachi M. Samocha
IONIC CHANGES DURING THE PRODUCTION OF Litopenaeus vannamei FED TWO
FEEDS OF DIFFERING PROTEIN CONTENT IN A ZERO-EXCHANGE, BIOFLOC-
DOMINATED SYSTEM

11:30 Héctor M. Esparza-Leal, Wilson Wasielesky Jr., João A. Amaral Xavier,
Ely S. López-Álvarez
EFFECT OF DIFFERENT SALINITIES AND ZERO-WATER EXCHANGE ON THE
PERFORMANCE OF Litopenaeus vannamei POSTLARVAE REARED WITH BIOFLOC

11:45 Yu Yu, Yu Xu
TOLERANCE TO AMMONIA, NITRITE AND DISSOLVED OXYGEN IN POSTLARVAE
AND JUVENILES OF WHITE SHRIMP Penaeus setiferus AND Penaeus vannamei

12:00 João Manoel Cordeiro Alves, Aline Bezerra, Dariano Krummenauer, Geraldo Fóes,
Carlos Augusto Prata Gaona, Wilson Wasielesky Jr.
THE USE OF FISH MEAL ANALOG IN THE FEEDING OF Litopenaeus vannamei BFT
CULTURE SYSTEM WITH DIFFERENT PROTEIN LEVELS

12:30 LUNCH
THE USE OF BELT FEEDERS IN SUPER INTENSIVE CULTURE OF PACIFIC WHITE SHRIMP Litopenaeus vannamei IN BFT SYSTEMS

1:45 Wilson Wasielesky, Lucas Genésio Silveira, Bob Advent, Geraldo Foes, Alessandro Cardozo, Luis Poersch, Carlos Gaona, Dariano Krummenauer
COMPARATIVE STUDY OF AERATION INJECTOR SYSTEM AND MICRO-PERFORATED AIR DIFFUSER HOSES IN SUPER INTENSIVE CULTURE OF Litopenaeus vannamei IN SOUTHERN BRAZIL

2:00 Thomas Drury, Andrew J. Ray
SHRIMP Litopenaeus vannamei PRODUCTION IN CLEAR WATER AND BIOFLOC SYSTEMS

2:15 Hisham A. Abdelrahman, Claude E. Boyd
INFLUENCE OF VARIATION IN WATER TEMPERATURE ON SURVIVAL, GROWTH, AND YIELD OF PACIFIC WHITE SHRIMP Litopenaeus vannamei IN INLAND PONDS FOR LOW-SALINITY CULTURE

2:30 Piyajit Pratipasen, Claude E. Boyd
EFFECT OF AMMONIA NITROGEN ON PRODUCTION AND HEMOLYMPH OF PACIFIC WHITE SHRIMP Litopenaeus vannamei CULTURED IN LOW SALINITY PONDS IN GREENE COUNTY, ALABAMA

2:45 Susan Laramore, John Scarpa
TOWARDS ESTABLISHING ENVIRONMENTAL MINERAL GUIDELINES FOR LOW SALINITY SHRIMP CULTURE IN FLORIDA

3:00 BREAK

3:30 Piyajit Pratipasen
EVALUATION OF PROBIOTICS USE FOR WATER QUALITY IMPROVEMENT IN INLAND, LOW-SALINITY SHRIMP PONDS IN GREENE COUNTY, ALABAMA

3:45 CANCELLED

4:00 Humberto Villarreal, José Naranjo, Walter Quadros, José Andrés Hernández, Luis Daniel Moreno, Mayra Vargas
CHARACTERIZATION OF A LOW WATER EXCHANGE SYSTEM FOR INTENSIVE SHRIMP PRODUCTION IN A SUBTROPICAL ENVIRONMENT

4:15 José Valverde, Jorge Alfaro
COMPENSATORY GROWTH AND PRODUCTIVITY IN THE CULTURE PHASES OF MATERNITY, DEVELOPMENT AND GROW-OUT OF THE WHITE SHRIMP Litopenaeus vannamei IN GOLFO DE NICOYA, COSTA RICA

4:30 Partha Bandyopadhyay, Prasenjit Barman, Pradeep K. Das Mohapatra
CHARACTERIZATION OF AQUATIC NITRIFYING BACTERIUM B. cereus PB45 AND STUDY OF ITS NAPA AND HAO GENETIC POTENTIAL IN WATER QUALITY MANAGEMENT
The “Shrimp Allergy” session will address basic and clinical research on the 18 major and minor shrimp allergens identified so far from various shrimp species.

Session Moderators:
Patrick S. Leung, K. H. Chu, Gilma Delgado, Acacia Alcivar-Warren, Chika Ikeogu, Chinniah Amutha

8:30 Acacia Alcivar-Warren
INTRODUCTION / WELCOME – RECOGNITION TO ‘JOHNIE CASTRO MONTEALEGRE AWARD’ WINNERS, AND COMMENTS ON POTENTIAL ASSOCIATION OF NEW SHRIMP ALLERGENS WITH PLAGUICIDES, HORIZONTAL TRANSFER OF MICROBIAL TRANSGENES PRESENT IN GENETICALLY MODIFIED CROPS USED IN AQUAFEEDS, AND ABLATION

8:45 Acacia Alcivar-Warren, Jacqueline Presedo, Gilma Delgado, Alexandra Bowen, Amber Williams
TRANSPOSABLE ELEMENT-LIKE REPEATS IN 18 SHRIMP ALLERGEN cDNAs HOMOLOGOUS TO METABOLISM AND IMMUNE RESPONSE (ANTIMICROBIAL) GENES

9:00 Alexandra Bowen, Acacia Alcivar-Warren, Jacqueline Presedo, Amber Williams
ARGININE KINASE: AN ESSENTIAL COMPONENT OF RISC THAT BINDS TO ANTIVIRAL WSSV vp28-siRNA, SHOWS VARIABLE mRNA EXPRESSION AND SINGLE NUCLEOTIDE POLYMORPHISMS IN Fenneropenaeus merguiensis (THAILAND, SINGAPORE), Litopenaeus vannamei (MEXICO, CHINA, THAILAND, USA), and Penaeus monodon (THAILAND, TAIWAN, CHINA, INDIA) – A REVIEW

9:15 Acacia Alcivar-Warren
HEMOCYANIN: A SHRIMP ALLERGEN, AN IMMUNE RESPONSE GENE (ANTIVIRAL AND ANTIFUNGAL), A BIOMARKER OF EXPOSURE TO Vibrio parahaemolyticus, AND SINGLE NUCLEOTIDE POLYMORPHISMS FOR TRACEABILITY OF COMMODITY AND SPF SHRIMP

9:30 Chinniah Amutha, Acacia Alcivar-Warren, Jianhai Xiang
VITELLOGENIN: A MOLTING GENE REGULATED BY GLYPHOSATE IS ALSO A SHRIMP ALLERGEN

10:00 BREAK

Session Moderators:
Patrick S. Leung, K. H. Chu, Gilma Delgado, Acacia Alcivar-Warren, Chika Ikeogu, Chinniah Amutha

10:30 Gilma Delgado Miranda, Gustavo Arencibia Carballo, Raquel Silveira Coffigny
TOXIC BENTONIC MICROALGAS ASSOCIATED WITH CIGUATERA AND OTHER INTOXICATIONS DUE TO CONSUMPTION OF AQUATIC ORGANISMS IN CUBA

11:00 Patrick S.C. Leung, Nicki Y.H. Leung, Christine Y.Y. Wai, Ka Hou Chu
ALLERGEN-SPECIFIC IMMUNOTHERAPY OF SHELLFISH ALLERGY: APPLICATION OF MIMOTOPE COCKTAIL CORRESPONDING TO IMMUNODOMINANT REGIONS OF SHRIMP ALLERGEN TROPOMYOSIN
ALLERGEN-SPECIFIC IMMUNOTHERAPY OF SHELLFISH ALLERGY: APPLICATION OF HYPOALLERGEN-ENCODING DNA VACCINE

11:30 Damir Hernandez Martinez, Acacia Alcivar-Warren, Anna Perez Beloborodova, Raquel Silveira Coffigny
-ACTIN: A NEW SHRIMP ALLERGEN - INTERACTIONS WITH IHHNV

11:45 Anne C. Eischeid
QUANTITATIVE REAL-TIME PCR BASED DETECTION OF SHRIMP IN COMPLEX FOOD MATRICES

12:00 Pharima Phiriyangkul, Acacia Alcivar-Warren
IDENTIFICATION OF ALLERGENS AND CROSS REACTIVITY BETWEEN Macrobrachium spp. AND EDIBLE FIELD CRICKET Gryllus bimaculatus

11:45 Lunch

Session Moderators:
Patrick S. Leung, K. H. Chu, Gilma Delgado, Acacia Alcivar-Warren, Chika Ikeogu, Chinniah Amutha

1:30 Acacia Alcivar-Warren, Gustavo Arencibia Carballo, Sofia Figueroa Zambrano, Miriam Alcivar Arteaga, Raquel Silveira Coffigny, Diego Alejandro Tigrero, Gilma Delgado Miranda, Marisela Hernandez, Christian Alcivar Navarrete, Mayra Galindo, Gober Asuncion, Mohammed Bedhane, Chika F. Ikeogu, Chinniah Amutha, Dang Thi Hoang Oanh
ENDOCRINE DISRUPTING CHEMICALS (metals, Glyphosate, Atrazine, DDE) AND OTHER PLAGUICIDES AND MICROBIAL TRANSGENES Bacillus thuringiensis PRESENT IN SOIL, SEDIMENT OF MANGROVES AND SHRIMP PONDS, SHELLFISH, FISH, AQUAFEEDS AND PEOPLE FROM TROPICAL COUNTRIES – AN IN-DEPTH LITERATURE REVIEW

2:00 Acacia Alcivar-Warren
THE NORTHERN SHRIMP Pandalus borealis: A POTENTIAL ‘HYPOALLERGENIC’ SHRIMP FOR AQUACULTURE IN THE NORTHEASTERN UNITED STATES?

2:15 Sofia Figueroa Zambrano, Acacia Alcivar-Warren, Gilma Delgado Miranda, Raquel Silveira, Miriam Alcivar Arteaga, Diego Alejandro Tigrero, Gustavo Arencibia
MEETING OF ‘THE SHRIMP EPGENOME (shrimpENCODE) PROJECT’ COLLABORATORS TO DISCUSS A WHITE PAPER TO FEDERAL AGENCIES REQUESTING FUNDING FOR BASIC RESEARCH ON INTERACTIONS OF ZIKA VIRU, MICROCEPHALY, GMO MOSQUITOS, AND THE LARVICIDE Bacillus thuringiensis USED FOR MOSQUITO CONTROL AND MANAGEMENT OF SHRIMP PONDS. Bacillus thuringiensis IS ALSO ASSOCIATED WITH AHPND/EMS-CAUSING Vibrio parahaemolyticus. OPEN TO THE PUBLIC
8:30  Lay Nguyen, Allen Davis
COMPARISON OF CRYSTALLINE LYSINE AND INTACT LYSINE USED AS A SUPPLEMENT IN PRACTICAL DIETS OF NILE TILAPIA Oreochromis niloticus

8:45  Brittany Peachey, Delbert Gatlin III
DIETARY HISTIDINE REQUIREMENT OF JUVENILE RED DRUM Sciaenops ocellatus

9:00  Sergio Castillo, Delbert M. Gatlin III
DIETARY VALINE REQUIREMENT OF JUVENILE RED DRUM Sciaenops ocellatus AND THE EFFECT OF EXCESS BRANCHED-CHAIN AMINO ACIDS ON GROWTH PERFORMANCE

9:15  Miguel A. Cabanillas Gámez, Lus M. López Acuña, Mario A. Galaviz Espinoza, Maricela Flores Ibarra, Conal D. True
TRYPTOPHAN AS MODULATOR OF CORTISOL, GLUCOSA AND LACTATE LEVELS IN PLASMA OF Totoaba macdonaldi UNDER STRESS

9:30  Yufan Zhang, Delbert M. Gatlin III
THE EFFECT OF AFLATOXIN-B1 ON HYBRID STRIPED BASS Morone chrysops × Morone saxatilis AND ASSESSMENT OF DIETARY SUPPLEMENTATION OF ARGinine FOR THE PREVENTION OF AFLATOXICOSIS

9:45  Alton Burns
CREATINE SUPPLEMENTATION IMPROVES GROWTH AND SURVIVABILITY OF JUVENILE RED DRUM Sciaenops ocellatus RAISED IN LOW-SALINITY CONDITIONS

10:00  BREAK

10:00  David Poppi, Brett Glencross, Stephen Moore
REDEFINING THE REQUIREMENT FOR TOTAL SULPHUR AMINO ACIDS IN THE DIET OF JUVENILE BARRAMUNDI Lates calcarifer INCLUDING ASSESSMENT OF THE CYSTEINE REPLACEMENT VALUE

11:00  Ivan Viegas, João Rito, Miguel A. Pardal, John Jones
ESTIMATING DE NOVO LIPOGENESIS IN EUROPEAN SEABASS Dicentrarchus labrax L. USING DEUTERATED WATER (2H2O)

11:15  Kelli Barry, Jesse Trushenski
REEVALUATING THE ESSENTIAL FATTY ACID REQUIREMENTS OF RAINBOW TROUT Oncorhynchus mykiss

11:30  Christopher Jackson, Artur N. Rombenso, Jesse Trushenski
REEVALUATING THE ESSENTIAL FATTY ACID REQUIREMENTS OF CHANNEL CATFISH

11:45  Kevin Stuart, Ron Johnson, Lisa Armbruster, Mark Drawbridge
MANIPULATION OF ARACHIDONIC ACID IN THE DIET OF ADULT CALIFORNIA YELLOWTAIL Seriola lalandi

12:00  Dave Jirsa, Jesse Trushenski, Andrea Marino, Mark Drawbridge
EMULIFIERS IN SOYBEAN OIL-BASED DIETS FOR CALIFORNIA YELLOWTAIL
12:15 Joel Van Eenennaam, Serge Doroshov, Ken Beer
POTENTIAL BENEFITS OF A LOW FAT FINISHING DIET FOR WHITE STURGEON
Acipenser transmontanus CAVIAR PRODUCTION

12:30 LUNCH

1:30 Mayra L. González-Félix, Martin Perez-Velazquez, Christian Minjarez-Osorio
EFFECT OF DIETARY LIPID LEVEL ON GROWTH PERFORMANCE, FEED
UTILIZATION, AND BODY COMPOSITION OF TOTOABA Totoaba macdonaldi

1:45 Guillaume Salze, Dave Jirsa, Kevin Stuart, Allen Davis, Mark Drawbridge
EFFECTIVE USE OF CARBOHYDRATES AS A DIETARY ENERGY SOURCE IN
CALIFORNIA YELLOWTAIL Seriola lalandi

2:00 Gabriela Gaxiola, Martin Arenas, Alfonso Alverez, Gerard Cuzon, Maite Mascaro,
Carlos Maldonado
EFFECT OF SALINITY AND DIETARY PROTEIN LEVEL ON PHYSIOLOGICAL
CONDITION AND DIGESTIVE ACTIVITY OF JUVENILES OF SNOOK Centropomus
undecimalis REARED IN CONTROLLED CONDITION

2:15 Yathish Ramena, Miles Lange, Steven Rawles, Rebecca Lochmann, Pengyin Chen,
T. Gibson Gaylord, Matthew McEntire, Benjamin Beck, Bradley Farmer,
Frederick T. Barrows
THE EFFECT OF ß-CONGLYCININ AND GUT HISTOLOGY OF THE SUNSHINE BASS
FED DIETS WITH NEW VARIETIES OF NON-GM SOYBEANS

2:30 Peter M. Nicklason
INACTIVATION OF ANTI-NUTRITIONAL FACTORS IN WHOLE FAT SOYBEANS AT
DIFFERENT TEMPERATURES AND MOISTURE CONTENT

2:45 Yathish Ramena, Steven D. Rawles, Rebecca Lochmann, Pengyin Chen,
T. Gibson Gaylord, Matthew McEntire, Benjamin Beck, Bradley Farmer, Miles Lange,
Frederick T. Barrows
EVALUATION OF GROWTH, NUTRIENT RETENTION, HEALTH, AND RESISTANCE TO
BACTERIAL CHALLENGE IN SUNSHINE BASS FED DIETS WITH NEW VARIETIES
OF NON-GENETICALLY MODIFIED SOYBEANS

3:00 BREAK

3:30 Justin Yost, Madison Powell, Wendy Sealey, Frederic Barrows, Michael Denson,
Aaron Watson
EFFECTS OF GRADED LEVELS OF DIETARY SOYBEAN MEAL INCLUSION ON
GROWTH OF COBIA Rachycentron canadum

3:45 Thomas Welker, Frederic Barrows, Ken Overturf, T. Gibson Gaylord,
Jason Abernathy
MANGANESE REQUIREMENT OF RAINBOW TROUT FED A COMMERCIAL-TYPE,
PLANT-BASED DIET

4:00 Matthew Cook, Ronald Johnson
USING METAL OXIDE MARKERS FOR LARVAL FEEDING AND NUTRITION STUDIES

4:15 CANCELLED
ENHANCING AQUATIC VETERINARY PRACTICE AND CLIENT PRODUCTION
Thursday, February 25     8:30 - 5:00     Bordeaux
Chair: David Scarfe

Moderator: A.D. Scarfe
8:30 Christopher Good, Travis May, Curtis Crouse, Steven Summerfelt
ASSESSING THE IMPACT OF SWIMMING EXERCISE AND THE RELATIVE SUSCEPTIBILITY OF RAINBOW TROUT *Oncorhynchus mykiss* AND ATLANTIC SALMON *Salmo salar* FOLLOWING INJECTION CHALLENGE WITH *Weissella ceti*

8:45 Katherine Haman, Kenneth Warheit
HOST AND ENVIRONMENTAL MICROBIOMES – WHAT CAN THEY TELL US ABOUT DISEASE OUTBREAKS?

9:00 Janet Whaley, Jane Staveley, Josie Nusz
ENVIRONMENTAL ASSESSMENT OF THERAPEUTIC DRUGS USED IN AQUACULTURE

9:15 Myron J. Kebus
VETERINARY SOLUTIONS TO TROUT DISEASE CASES

9:30 Jennifer A. Dill
THE IMPORTANCE OF COMMUNICATION TO ENHANCE THE VALUE AND EFFICIENCY OF AQUATIC DIAGNOSTICS

10:00 BREAK

Moderator: TBD
11:00 Jennifer Dill
DIAGNOSTICS FOR THE AQUATIC PRACTITIONER: SERVICES, OPTIONS, AND ADVICE

11:30 Myron J. Kebus
VETERINARY SERVICES AND SMALL-SCALE TILAPIA FARMS

11:45 Nora Hickey, Myron Kebus, Michael Collins
USING VETERINARIANS TO INCREASE PROFITS IN AQUACULTURE

12:00 David Scarfe
AQUATIC VETERINARY EDUCATION AND CLINICAL COMPETENCY/CERTIFICATION PROGRAMS TO MEET PRODUCER AND REGULATORY NEEDS

12:30 LUNCH

Moderator: A.D. Scarfe
1:30 Kathleen H. Hartman, Lynn H. Creekmore, Christa L. Speekmann
NATIONAL VETERINARY ACCREDITATION PROGRAM (NVAP) – AQUATIC ANIMAL MODULES 13, 14 & 15

3:00 BREAK
THURSDAY

Moderator: TBD

3:30 Dragan Momcilovic, David Edwards, Sharon Benz
VETERINARY FEED DIRECTIVE REGULATIONS FOR ANIMAL DRUGS

4:00 David Scarfe
DESIGNING AND IMPLEMENTING AQUATIC VETERINARY BIOSECURITY
PROGRAMS TO MEET PRODUCER, NATIONAL AND INTERNATIONAL NEEDS

4:30 Kathleen Hartman, Lori Gustafson, Christa Speekmann, Lynn Creekmore,
Lauren Harris, Lee Ann Thomas
U.S. COMMERCIAL AQUACULTURE HEALTH PROGRAM STANDARDS (CAHPS)

SHELLFISH DISEASE
Thursday, February 25   8:30 - 5:00   Vendome B
Chairs: Kim Reece, Ryan Carnegie, Roxana Smolowitz

8:30 Hyun-Sung Yang, Do-Hyung Kang, Hyun-Ki Hong, Hee-Jung Lee, Hee-Do Jeung,
Kwang-Sik Choi
INTER-ANNUAL VARIATION IN THE REPRODUCTIVE PATTERN OF MANILA CLAM
Ruditapes philippinarum AND IMPACTS OF Perkinsus olseni INFECTION ON THE
REPRODUCTION OBSERVED FROM THE WEST COAST OF KOREA

8:45 Hye-Mi Lee, Kwang-Sik Choi, Kyung-II Park, Hyoun-Joong Kim, Hyun-Sil Kang,
Hyun-Ki Hong, Hee-Jung Lee
MONITORING Perkinsus olseni INFECTION INTENSITY AND PREVALENCE
IN JUVENILE MANILA CLAM Ruditapes philippinarum TRANSPLANTED IN
INTERTIDAL MUD FLAT AND A CAGE SUSPENDED IN WATER COLUMN

9:00 Tsukasa Waki, Jee-Youn Lee, Young-Ghan Cho, Kwang-Sik Choi
INCREASE IN Perkinsus olseni INFECTION IN MANILA CLAMS Ruditapes
philippinarum TRANSPLANTED FROM LOW TO HIGHER INFECTION AREA ON THE
WEST COAST OF KOREA

9:15 Kennedy T. Paynter, Matt Spitznagel, Anne Handschy
WEIGHTED PREVALENCE OF Perkinsus marinus (DERMO) INFECTIONS IN
HATCHERY-PRODUCED OYSTERS PLANTED ON NATURAL OYSTER BARS IN THE
CHESAPEAKE BAY IN RESTORATION EFFORTS ARE CORRELATED WITH THE
WEIGHTED PREVALENCE OF NATIVE OYSTERS UPON WHICH THE HATCHERY
OYSTERS WERE PLANTED

9:30 Ryan Carnegie, Susan Ford, Rita Crockett, Peter Kingsley-Smith
A RAPID INCREASE IN Perkinsus marinus VIRULENCE CAUSED THE
HISTORICALLY SIGNIFICANT 1980’S EPIZOOTIC

9:45 Eric N. Powell
WHAT IS GOING ON WITH Perkinsus marinus IN THE GULF OF MEXICO?

10:00 BREAK

11:00 Marine Fuhrmann, Bruno Petton, Fabrice Pernet
DISEASE TRANSMISSION AND ASSOCIATED MORTALITIES OF THE PACIFIC
OYSTER Crassostrea gigas: DOES SALINITY MATTER?
11:15 Jorge Cáceres-Martínez, Luis Humberto Madero-López, Gloria Padilla-Lardizábal, Rebeca Vásquez-Yeomans
EPIZOOTIOLOGY AND ENDEMIC CHANNEL OF Perkinsus marinus, PARASITE OF THE PLEASURE OYSTER Crassostrea corteziensis, IN THE PACIFIC COAST OF MEXICO

11:30 Roberto Cruz-Flores, Montserrat Muñoz-Flores, Jorge Cáceres-Martínez, Rebeca Vásquez-Yeomans, Miguel Ángel Del Río Portilla, Mónica Hernández Rodríguez, Áxayácatl Rocha Olivares
Candidatus Xenohaliotis californiensis AND ITS HYPERPHAGE IN BLUE AND YELLOW ABALONE OF THE PENINSULA OF BAJA CALIFORNIA, MEXICO

11:45 Roberto Cruz-Flores, Jorge Cáceres-Martínez Cáceres-Martínez, Rebeca Vásquez-Yeomans
OPTIMIZATION OF THE PROCEDURE TO SEPARATE MEMBRANE BOUND VACUOLES OF Candidatus Xenohaliotis californiensis FROM HOST ABALONE TISSUE

12:00 Benjamin Morga, Nicole Faury, Isabelle Arzul, Tristan Renault
HAEMOCYTES FROM Crassostrea gigas AND OSHV-1: A PROMISING IN VITRO MODEL TO STUDY HOST/VIRUS INTERACTIONS

12:15 Miguel del Río Portilla, Fabiola Lafarga-De La Cruz, Carmen Paniagua-Chávez, Francisco J. García-De León
GENOMIC ANALYSIS AND VIRAL AND TRANSPOSON SEQUENCES IN AQUATIC ORGANISMS

12:30 LUNCH

1:30 Timothy Green, Peter Speck, David Raftos, Michael Beard, Karla Helbig
EVIDENCE THE PACIFIC OYSTER HAS A TYPE I INTERFERON RESPONSE: IMPLICATIONS FOR DISEASE MANAGEMENT

1:45 Antonio Villalba, Michael J. Metzger, David Iglesias, María J. Carballal, Stephen P. Goff
AT LEAST TWO CONTAGIOUS CANCER CELL LINEAGES CAN TRANSMIT DISSEMINATED NEOPLASIA IN COCKLES Cerastoderma edule

2:00 Roxanna Smolowitz, Catherine Grimm, Carl Huntsberger
MYCOBACTERIAL sp. INFECTIONS IN SEA SCALLOPS Placopesten magellanicus FISHED FROM U.S. WATERS IN THE NORTHWEST ATLANTIC

2:15 Hyun-Sil Kang, Naoki Itoh, Kwang-Sik Choi
FIRST REPORT OF Marteilia sp. INFECTION IN MANILA CLAM Ruditapes philippinarum ON SOUTHERN COAST OF KOREA

2:30 Isabelle Arzul, Delphine Serpin, Cyril Maingourd, Helene Boulet, Nicolas Keck, Hannah Stagg, Eann Munro, Michele Civettini, Giuseppe Arcangeli, Deborah Cheslett, Paul Savage, Christine Dubreuil, Celine Garcia, Lydie Canier
A MULTIPLEX REAL-TIME PCR ASSAY FOR THE DETECTION AND TypING OF Marteilia refringens
2:45 Isabelle Arzul, Laury Baillon, Bruno Chollet, Christine Dubreuil, Celine Garcia, Purotu Heloury, Mathieu Hussenot, Delphine Serpin, Stephane Pouvreau
DIFFERENTIAL DYNAMICS OF *Bonamia ostreae* AND *Marteilia refringens* IN A SAME POPULATION OF FLAT OYSTER *Ostrea edulis* IN RADE DE BREST, BRITTANY, FRANCE

3:00 BREAK

3:30 Timothy Bowden, Nicole Messerman, Jacob Sicotte, Jeffrey Vigue, Grant Dickey
PREVALENCE OF THE OYSTER PARASITE *Haplosporidium nelsoni* IN COMMERCIAL AND NATURAL-BED POPULATIONS OF THE EASTERN OYSTER *Crassostrea virginica* IN THE DAMARISCOTTA ESTUARY, MAINE

3:45 Gorka Bidegain, John Klinck, Julia Levin, Eric Powell, Eileen Hofmann, Dale Haidvogel
A COUPLED BENTHIC-CIRCULATION MODEL FOR DERMO DISEASE IN THE EASTERN OYSTER *Crassostrea virginica*

4:00 Bhagat Lal Dutta, Coralie Lupo, Sébastien Petton, Pauline Ezanno, Marie-Agnès Travers, Delphine Tourbiez, Julien Normand, Aline Gangnery, Fabrice Pernet, Cédric Bacher
SUMMER MORTALITY IN PACIFIC OYSTER: A METAPOPULATION MODEL OF *Vibrio aestuarianus* INFECTION

BUILDING SOCIAL ACCEPTANCE THROUGH INNOVATIVE COMMUNICATION
Thursday, February 25  11:00 - 12:30  Burgundy
Chair: Linda Heimstra

The aquaculture industry has often used science to defend its position as a socially responsible and environmentally conscious industry. The science based message has not always resonated with the general public and as a result the fear messaging of some anti-industry groups is widely accepted as the truth about the industry. This session will explore alternative methods of communicating to gain wider acceptance of the industry and greater understanding of the important role aquaculture has in food production.

11:00 Jeremy Dunn
BUILDING TRUST: GAINING INDUSTRY ACCEPTANCE IN AQUACULTURE

11:15 Ekaterina Prasolova-Forland, Anders Boe
POPULARIZING AQUACULTURE WITH VIRTUAL REALITY: A NORWEGIAN EXAMPLE

11:30 Rick Moonen
THE ROLE OF SERVING SUSTAINABLY SOURCED SEAFOOD IN BUILDING ACCEPTANCE OF AQUACULTURE PRODUCTS

11:45 Gudmundur Stefansson, Kolbrun Sveinsdottir, Valur N. Gunnlaugsson
THE PRIMEFISH PROJECT – LINKING THE NEEDS OF THE PRODUCER, RETAILER AND CONSUMER

12:00 John Nickum
SOCIAL ACCEPTANCE OF AQUACULTURE: THE POLITICS OF FACTS VERSUS BELIEFS

12:15 DISCUSSION
MANAGING THE GENETIC RISK OF ESCAPES FROM AQUACULTURE
Thursday, February 25  1:30 - 5:00  Burgundy
Chairs: Ingrid Burgetz, Kristen Gruenthal

1:30  Dounia Hamoutene, Curtis Pennell, Kimberly Burt, Dwight Drover, Shayne McDonald, Brian Dempson, Geoff Perry, Keith Clarke
MOVEMENT AND DISPERAL OF FARmed ATLANTIC SALMON Salmo salar FOLLOWING SIMULATED ESCAPES IN FORTUNE BAY, NEWFOUNDLAND (CANADA)

1:45  Einar Eg Nielsen, AquaTrace Consortium
AQUATRACE: PROVIDING MOLECULAR TOOLS FOR ASSESSING AND MONITORING POTENTIAL GENETIC IMPACT OF AQUACULTURE ON NATIVE POPULATIONS

2:00  Ian Bradbury, Lorraine Hamilton, Geoff Perry, Carole Grant, Martha Robertson, Brian Dempson
GENOMIC TOOLS TO QUANTIFY THE DIRECT GENETIC IMPACTS OF ESCAPED FARmed ATLANTIC SALMON ON WILD POPULATIONS IN EASTERN CANADA

2:15  CANCELLED

2:30  Monica Solberg, Kevin G. Glover, Mikko Heino, Ove T. Skilbrei, Øystein Skaala, Vidar Wennevik, Terje Svaåsand
RISK ASSESSMENT OF GENETIC IMPACT OF ESCAPED FARmed SALMON ON WILD POPULATIONS IN NORWAY

2:45  Tanya L. Darden, John D. Robinson, Allen E. Strand, Michael R. Denson
FORECASTING GENETIC IMPACTS OF NET PEN FAILURES ON GULF OF MEXICO COBIA POPULATIONS USING INDIVIDUAL-BASED MODELING

3:00  BREAK

3:30  Kristen Gruenthal, Gregory Blair, Jason Volk, Gavin Key, Michael Rust
EXPLORING THE FITNESS RISK POSED BY ESCAPES FROM MARINE AQUACULTURE: THE OMEGA MODEL

3:45  DISCUSSION
AES PROGRAM
Thursday, February 25  1:30 - 5:45  Versailles 3
Chairs: Todd Guerdat, Astrid Buran Holan

1:30  Jelena Kolarevic, Rune Iversen, Svein Martinsen, Per Gunnar Kvenseth, Bendik Fyhn Terjesen
PRODUCTION OF ATLANTIC SALMON POST-SMOLTS Salmo salar IN FLEXIBAG SEMI-CLOSED CONTAINMENT SYSTEM

1:45  John Davidson, Christopher Good, Gregory Weber, Christina Russell, Steven Summerfelt
COMPARING THE EFFECTS OF “HIGH” (100 mg/L) VERSUS “LOW” (10 mg/L) NITRATE-NITROGEN ON POST-SMOLT ATLANTIC SALMON Salmo salar PERFORMANCE AND PHYSIOLOGY IN RECIRCULATION AQUACULTURE SYSTEMS

SEMI-CLOSED SEA SYSTEMS FOR POST-SMOLT ATLANTIC SALMON

2:15  Astrid Buran Holan, Jelena Kolarevic, Bendik Fyhn Terjesen
EVALUATION OF MEMBRANE TREATMENT EFFECT ON WATER QUALITY IN RECIRCULATING AQUACULTURE SYSTEMS (RAS) FOR ATLANTIC SALMON POST-SMOLTS Salmo salar

2:30  Cristian Cifuentes, M.H. Kim
INFLUENCE OF WAVE KINEMATICS STRETCHING METHODS ON FORCES OVER A CAGE UNDER REGULAR WAVES AND CURRENT

2:45  Chun Woo Lee, Jihoon Lee, Subong Park, Gebremeskel Kebede
EXPERIMENTAL AND NUMERICAL INVESTIGATION OF DIFFERENT MOORING SYSTEMS ON STABILITY OF THE FISH CAGE

3:00  BREAK

3:30  Steven Hall, Jeanne Steyer, Melody Thomas
COASTAL BIOENGINEERED REEFS AND ENGINEERED CAGE CULTURE TO GROW EASTERN OYSTERS Crassostrea virginica FOR FOOD AND COASTAL PROTECTION RESTORATION

3:45  Daury Garcia-Pulido, Arturo Gonzalez-Rodriguez, Ivan Gallego-Alarcon
THE USE OF CONSTRUCTED WETLANDS FOR THE TREATMENT OF AQUACULTURE WASTEWATER IN THE MEXICAN HIGHLANDS

4:00  Todd Guerdat, James M. Ebeling
ENGINEERING DESIGN CONSIDERATIONS FOR RECIRCULATING AQUAPONICS SYSTEMS (RaqS) TO MAXIMIZE PRODUCTIVITY AND ECONOMIC VIABILITY

4:15  Traci S. Bell, Craig M. Bell, James M Ebeling, Michael B Timmons
RESEARCHING ECONOMIC FEASIBILITY OF THE “MIXED CELL RACEWAY”, PROVIDING A PATHWAY FOR SMALL FARMS TO ENTER THE AQUACULTURE INDUSTRY
4:30  **Daniel D. Smith**, Amanda M. Taylor, Andrew J. Tykol, Callie L. Silvia, Sean S. Cotlar, Steven G. Hall  
AQUACULTURAL APPLICATIONS OF AN AUTONOMOUS AQUATIC BIOMASS COLLECTOR

4:45  **Marlon Greensword**, Steve Hall, Ronald Malone  
EVALUATION OF RICE HULLS AS A BIOCARRIER FOR A THREE PHASE BIOREACTOR

5:00  **Ronel S. Pangan**, Kevin F. Yaptenco, Sharmaine N. Pardua, Jonnel Andrew C. Duque  
ENHANCING THE PHILIPPINE SEA CUCUMBER INDUSTRY THROUGH THE DEVELOPMENT OF AN APPROPRIATE PROCESSING TECHNOLOGY

5:15  **Tzolkin Rossel-Mendoza**, Iván Gallego-Alarcón, Daury García-Pilido  
EFFECT OF TROPHIC ENVIRONMENT IN TAN REMOVAL EFFICIENCY IN A FRACTAL FILTER MEDIA (UAE-Mex-1)

5:30  **Paul S. Wills**, Timothy Pfeiffer, Richard Baptiste, and Barnaby Watten  
FLUIDIZED BED ARAGONITE REACTOR FOR CONTROL OF ALKALINITY, pH AND CARBON DIOXIDE IN MARINE RECIRCULATING AQUACULTURE SYSTEMS

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**FINFISH GENETICS**  
Thursday, February 25 1:30 - 5:00  Concorde A  
Chair: Madison (Matt) Powell

1:30  **Catherine Purcell**, Elizabeth Smith, Mark Drawbridge, Kevin Stuart, Andrew Severin, John Hyde  
APPLYING GENETIC AND GENOMIC TOOLS TOWARD UNDERSTANDING BROODSTOCK DYNAMICS AND LARVAL DEVELOPMENT IN THE CALIFORNIA YELLOWTAIL *Seriola dorsalis*

1:45  **Catherine Purcell**, Andrew Severin, Vince Buonaccorsi, Mark Drawbridge, Kevin Stuart, John Hyde  
RNA-SEQ ANALYSIS OF LARVAL STAGES OF SLOW- AND FAST-GROWING YELLOWTAIL *Seriola dorsalis*

2:00  **Boris Gomelsky**, Thomas A. Delomas, Jeffrey L. Warner, Laurel A. Nason  
APPEARANCE OF RED EYES IN KOI IS CONTROLLED BY DOMINANT MUTATION WHICH CAUSES ONLY PARTIAL SKIN DEMELANIZATION IN WILD-TYPE COLOR COMMON CARP

2:15  **Jeffrey Warner**, Boris Gomelsky, Thomas A. Delomas  
REPRODUCTIVE ABILITY OF SECOND GENERATION KOI × GOLDFISH HYBRID MALES AND RESULTS OF THEIR CROSSES WITH HYBRID FEMALES

2:30  **Tracy S. Kennedy**, T. Gibson Gaylord, Wendy M. Sealey, Madison S. Powell  
NUTRIGENOMIC BIOMARKERS FOR DIETARY SOYBEAN MEAL UTILIZATION IN RAINBOW TROUT

2:45  **G. I. Godahewa**, N.C.N. Perera, Jehee Lee  
ANTIOXIDANT DEFENSE OF TWO PEROXIREDOXIN MEMBERS FROM BLACK ROCKFISH *Sebastes schlegelii* WITH THEIR MOLECULAR PROFILING AND TISSUE SPECIFIC EXPRESSIONAL PROFILE
3:00  BREAK

3:30  Md Mursalin Khan, SM Ashiqul Islam, Ahmed Mustafa
IDENTIFICATION OF STRESS-RELATED MOLECULAR BIOMARKERS IN ZEBRAFISH:
AN IN-SILICO APPROACH

3:45  Sixin Liu, Yniv Palti, Guangtu Gao, Caird E Rexroad III
A PANEL OF SINGLE NUCLEOTIDE POLYMORPHISM FOR PARENTAGE
ASSIGNMENT IN RAINBOW TROUT

4:00  Michael Pietrak, William Wolters, Caird Rexroad
ADDITION OF A SELECTIVE BREEDING PROGRAM FOR RESISTANCE TO SEA LICE
Lepeophtheirus salmonis TO EXISTING LINES ATLANTIC SALMON Salmo salar AT
THE USDA’S NATIONAL COLD WATER MARINE AQUACULTURE CENTER

4:15  Gusheinzed Waikhom, Labee Thoidingjam, Vishwamitra Singh Baisvar,
Sukham Sanjabyhari Singh, Ravindra Kumar, Basdeo Kushwaha
GENETIC CHARACTERIZATION OF SELECTED FRESHWATER FISH SPECIES
ENDEMIC TO INDIAN REGION OF THE INDO-BURMA BIODIVERSITY HOT-SPOT
USING ADVANCED CYTOGENETIC MARKERS

4:30  N.C.N. Perera, G. I. Godahewa, Jehee Lee
CuZnSOD, AN ANTIOXIDANT GENE FROM SEAHORSE Hippocampus abdominalis;
CLONING, SEQUENCE CHARACTERIZATION, IMMUNE RESPONSE AND
ANTIOXIDANT ACTIVITY OF ITS RECOMBINANT PROTEIN

MACROALGAL EXPLOITATION AND AQUACULTURE
Thursday, February 25  1:30 - 5:45  Concorde C
Chair: Alejandro Buschmann

1:30  Alejandro Buschmann, Carolina Camus, Sandra V. Pereda,
María C. Hernández-Gonzále, Robinson Altamirano, Karina Villegas,
José L. Kappes
INTRODUCTION INTO SEAWEED PRODUCTION: CONCEPTS, FARMING AND USES

1:45  Peimin He, Hailong Wu, Yuanzi Huo, Yuanyuan Liu
INDUSTRIAL CHAIN OF PYROPIA AQUACULTURE AND BIOREMEDIATION IN
JIANGSU PROVINCE COASTS, CHINA

2:00  Jang Kim, Miseon Park, Youngdae Kim, Byunghwa Min, Charles Yarish
SEAWEED AQUACULTURE IN KOREA: STATUS AND FUTURE DIRECTIONS

2:15  Ji Li, Patrick Kangas, Daniel Terlizzi
POTENTIAL VALUE OF MACROALGAE CULTIVATION IN THE CHESAPEAKE BAY
AREA

2:30  Anoushka Conception, Tessa Getchis, Nancy Balcom, Kristin DeRosia-Banick
IDENTIFYING AND ADDRESSING PROCESS-RELATED CHALLENGES TO THE
EXPANSION OF SEA VEGETABLE AQUACULTURE IN CONNECTICUT
DOMESTICATION AND MARICULTURE OF THE KELP *Eisenia arborea* (ARESCHOUNG) OFF THE PACIFIC COAST OF BAJA CALIFORNIA, MEXICO

3:00  **BREAK**

3:30  **Anthony J. Siccardi III**, Nathan D. Huysman, Zachary B. Fuqua, Ryan W. Davis, Cristina M. Richardson, Todd W. Lane  
A COMPARISON OF STRUVITE AND TRADITIONALLY USED NUTRIENTS IN 90-DAY, SEMI-CONTINUOUS, MIXED ALGAL CULTURE PRODUCTION TRIALS IN OUTDOOR RACEWAYS

3:45  **Lior Guttman**  
PERIPHYTON-BASED BIOFILTER FOR MARICULTURE EFFLUENT TREATMENT, POTENTIAL FOR SUSTAINABLE LAND-BASED MARICULTURE

4:00  **Julio A. Vásquez**  
BROWN SEAWEEDS OF ECONOMIC IMPORTANCE IN NORTHERN CHILE: VALUES OF GOODS AND SERVICES OF THE ECOSYSTEM

4:15  **Song Qin**, Zhengyi Liu, Jun Chen  
ALGAL BIOMASS TECHNOLOGY AND ALGAL BIO-ECONOMY IN CHINA: CHALLENGES AND PROSPECTS

4:30  **Holly Cronin**, Andrew Sellers, Amir Neori  
BIOMIMICRY CONSIDERATIONS FOR SEAWEED MARICULTURE: ASSESSING FUNCTIONAL DIVERSITY AT THE LOCAL SCALE

4:45  **Charles Yarish**, Jang Kim  
NUTRIENT BIOEXTRACTION BY SEAWEED FARMING IN NEW YORK CITY, LONG ISLAND SOUND AND OTHER URBANIZED ESTUARIES IN SOUTHERN NEW ENGLAND

5:00  **Sara Barrento**, Carolina Camus, Isabel Sousa-Pinto, Alejandro Buschmann  
OVER A DECADE PROMOTING SEAWEEDS AS EFFICIENT INORGANIC NUTRIENT SINKS IN INTEGRATED MULTI-TROPHIC AQUACULTURE (IMTA): NOW WHAT?

5:15  **Gayani Dilshara Matharage**, Prasad Jayasooriya, Chang-Hee Kang, Hee-Ju Kim, Yung Hyun Choi, Gi-Young Kim, Prasad Jayasooriya, Chang-Hee Kang, Hee-Ju Kim, Yung Hyun Choi, Gi-Young Kim  
RED ALGAE *Polyopes affinis* EXTRACTS IN LPS-INDUCED INFLAMATORY RESPONSE IN BV2 MICROGLIAL CELLS

5:30  **Michael Morrissey**, Jason Ball, Ann Colonna, Sarah Masoni, Cathy Durham, Chris Langdon, Chuck Toombs  
DEVELOPMENT OF VALUE-ADDED FOOD PRODUCTS MADE FROM DULSE *Palmaira mollis*
AQUACULTURE 101
Thursday, February 25     1:30 - 5:00     Concorde B
Chair: Kathleen Hartman

1:30 Carlos Martinez
SCHOOL IS IN! CALCULATING COMMON TREATMENTS IN PONDS AND TANKS

2:00 Rick Barrows
DEVELOPMENT OF PLANT-BASED FEEDS FOR FISH

2:30 Craig Watson
ARTIFICIAL SPAWNING TECHNIQUES IN FISH (RATED PG)

3:00 BREAK

3:30 Bill Martin
EXPERIENCES IN AQUACULTURE

4:00 Ron Malone
LAYOUT AND DESIGN OF A RECIRCULATING AQUACULTURE FACILITY

4:30 James Morris
CURRENT MARINE AQUACULTURE PRACTICES

MICROBIAL COMMUNITIES OF SHELLFISH: INFLUENCE OF EXTRINSIC AND INTRINSIC FACTORS, AND POTENTIAL EFFECTS ON THE HOST
Thursday, February 25     1:30 - 4:00     Loire
Chairs: Evan Ward, Melissa Pierce

1:30 J. Evan Ward, Melissa L. Pierce, Bridget A. Holohan, Xiaowei Zhao, Randall E. Hicks
THE INFLUENCE OF SITE AND SEASON ON THE GUT AND PALLIAL FLUID MICROBIAL COMMUNITIES OF THE EASTERN OYSTER Crassostrea virginica

2:00 Melissa Pierce, J. Evan Ward
BIVALVES MAINTAIN A CORE GUT MICROBIOME: SEASONAL TRENDS AND SPECIES VARIATION

2:15 Timothy Green, Agnes Vergnes, Julien de Lorgeril, Caroline Montagnani
MICROBIAL COMMUNITIES OF OYSTERS – IMPLICATIONS FOR IMMUNE STATUS AND DISEASE

2:30 Wanilada Rungrassamee, Amornpan Klanchui, Sawarat Maibunkaew, Sage Chaiyapechara, Sithicheke Tangphatsornruang, Pikul Jiravanichpaisal, Nitsara Karoonuthaisiri
EXPLORING BACTERIAL DIVERSITY IN INTESTINES OF THE BLACK TIGER SHRIMP Penaeus monodon

2:45 Jin-Xing Wang, Xian-Wei Wang, Xiao-Fan Zhao
A C-TYPE LECTIN INHIBITS PROLIFERATION OF THE HEMOLYMPH MICROBIOTA BY MAINTAINING THE EXPRESSION OF ANTIMICROBIAL PEPTIDES
3:00  BREAK

3:30  Demin Zhang, Jinbo Xiong, Linglin Qiuqian, Yunxia Qian, Xin Wang
CULTURED SHRIMP HEALTH STATUS IS ASSOCIATED WITH THE COMPOSITION
OF AQUATIC AND INTESTINAL BACTERIAL COMMUNITIES

3:45  Norman Meres, Patrick Gillevet, Stephen McClure, Masoumeh Sikaroodi,
Jeffrey Shields
NETWORK ANALYSIS OF MICROBIAL COMMUNITIES ASSOCIATED WITH
EPIZOOTIC SHELL DISEASE IN THE AMERICAN LOBSTER Homarus americanus

STRIPPED BASS GROWERS ASSOCIATION INDUSTRY FORUM
Thursday, February 25     1:30 - 5:30     Versailles 2
Chair: Tyler Faucette

1:30  Mike Freeze
UPDATES FROM THE NATIONAL AQUACULTURE ASSOCIATION

1:45  Delbert M. Gatlin III
UPDATE ON HYBRID STRIPED BASS NUTRITION RESEARCH AT TEXAS A&M
UNIVERSITY

2:00  Steven D. Rawles
RECENT FISH NUTRITION RESEARCH AT SNARC

2:15  Kathleen Hartman
COMMERCIAL AQUACULTURE HEALTH PROGRAM STANDARDS (CAHPS)

2:30  Adam Fuller
HYBRID STRIPED BASS BREEDING PROGRAM

2:45  Ron Hardy
MOVING TOWARDS SUSTAINABLE STRIPED BASS FEEDS

3:00  Anita Kelly
2015 U.S. HYBRID STRIPED BASS INDUSTRY SURVEY

3:15  Linda O’Dierno
UNDERSTANDING THE MARKET – THE KEY TO A SUCCESSFUL BUSINESS

3:30  SBGA ANNUAL MEMBERS MEETING

4:00  SBGA BOARD OF DIRECTORS MEETING
1:30 Michael Schwarz  
DEVELOPMENT OF HATCHERY STRATEGIES FOR EMERGING MARINE FINFISH

2:00 Jonathan Lee, Rachel S. Poretsky, Matthew A. Cook, Jose Reyes-Tomassini, Barry A. Bereikjian, Frederick W. Goetz  
DMSP INCREASES SURVIVAL OF LARVAL SABLEFISH *Anoplopoma fimbria*

2:15 Maria Celia Portella, Thiago M. Freitas, Luiz Flávio J. Santos, Caroline C. Santana, Adriano M. Gonçalves, Rafael R. Colosio, Gabriela C. Pavarina, João M. Pizauro  
DIGESTIVE ENZYMATIC ACTIVITY ON *Piaractus mesopotamicus* LARVAE DURING EARLY LIFE STAGE AND UNDER DIFFERENT REARING PROTOCOLS

2:30 Christopher Green, Emily Babl  
EGG PRODUCTION IN GULF KILLIFISH *Fundulus grandis* AT VARYING ENVIRONMENTAL SALINITIES

2:45 Marlien Schaeck, Ward De Spieghelaere, Jurgen De Craene, Freddy Haesbrouck, Wim Van Den Broeck, Annemie Decostere, De Spiegeleer Bart, Christian Burvenich  
LASER CAPTURE MICRODISSECTION OF INTESTINAL TISSUE FROM EUROPEAN SEA BASS LARVAE

3:00 BREAK

3:30 Reginald B. Blaylock, Adam Daw, Eric A. Saillant, Jeff Lotz  
OPTIMIZING PROTOCOLS FOR USING COPEPODS AS LIVE FEEDS

3:45 Matt Hawkyard, Kevin Stuart, Mark Drawbridge, Chris Langdon  
DEVELOPMENT OF ALGINATE COMPLEX PARTICLES AND THEIR USE FOR EVALUATING COMPOUNDS THAT ENHANCE FEEDING BY MARINE FISH LARVAE.

4:00 Aaron Porterfield, Nicole Rhody, Kevan Main, Nathan Brennan  
EFFECTS OF SALINITY ON AGGRESSIVE AND CANNIBALISTIC BEHAVIOR IN POST-LARVAL COMMON SNOOK *Centropomus undecimalis*

4:15 Cristian Martínez, Saúl Hernández, Ricardo Toscano, Nathan Brennan, Kevan Main, Carlos Yanes-Roca, Carlos Martínez-Palacios  
COMPENSATORY GROWTH OF BLACK SNOOK *Centropomus nigrescens* JUVENILES UNDER TWO DIFFERENT SALINITIES

4:30 John Stieglitz, Ronald Hoenig, Carlos Tudela, Steven Kloeblen, Martin Grosell, Daniel Benetti  
OPTIMIZATION OF MAHI-MAHI *Coryphaena hippurus* AQUACULTURE THROUGH PHYSIOLOGICAL AND BIOENERGETICS RESEARCH

4:45 Pablo Fuentes, Benjamin Baron-Sevilla, Juan P Lazo  
EFFECT OF FEED QUALITY DURING THE LARVAL STAGE IN THE GROW-OUT PERFORMANCE OF *Totoaba macdonaldi* JUVENILES

5:00 Gabriela Gaxiola, Xavier Chiappa, Eduardo Pacheco  
METHODS OF GROWTH EVALUATION OF JUVENILES OF *Centropomus undecimalis* IN EXPERIMENTAL CONDITION
TEMPERATE BASSES
Friday, February 26  8:30 - 10:00  Vendrome A
Chair: Benjamin Reading

9:00 Scott A. Salger, Katherine R. Cassady, Benjamin J. Reading
CHARACTERIZATION OF A FAMILY OF THE PISCIDIN HOST DEFENSE PEPTIDES IN
THE STRIPED BASS *Morone saxatilis* AND WHITE BASS *Morone chrysops*

9:15 Linas Kenter, Adrienne Kovach, Curry Woods, Benjamin Reading, David Berlinsky
A STRAIN COMPARISON OF STRIPED BASS CULTURED IN RECIRCULATING
SYSTEMS AT DIFFERENT SALINITIES

9:30 Benjamin Reading, Robert Clark, Michael Hopper, David Berlinsky, Linas Kenter,
Ronald Hodson, Andrew McGinty
ORGANIZED GROUP-SPAWNING OF DOMESTICATED STRIPED BASS *Morone
saxatilis*

FINFISH NUTRITION - CONTINUED
Friday, February 26  8:30 - 10:00  Champagne 3
Chairs: Gibson Gaylord, Rebecca Lochmann, Yathish Ramena

8:30 Gary Burr, William Wolters, Stephen Owen, Daniel Benetti, Frederic Barrows
USE OF MOIST DIETS FOR ATLANTIC SALMON *Salmo salar* WHEN
TRANSITIONING FROM FRESH TO SEA WATER

8:45 John Bowzer, Michael Page, Jesse Trushenski
EXTRUSION TEMPERATURE AND PELLET SIZE INTERACT TO INFLUENCE
GROWTH PERFORMANCE OF HYBRID STRIPED BASS FED INDUSTRIALLY
COMPOUNDED AQUAFEEDS

9:00 Neil Sims, Gavin Key, Dale Sarver
FARMING FINNED BISON ON THE BLUE PRAIRIE: THE SWOT OF HERBIVOROUS
MARINE FISH, AS EXEMPLIFIED BY KYPHOSIDAE (CHUBBS)

9:15 Sungchul C. Bai, Seunghan Lee
NUTRITIONAL RESEARCH OF OLIVE FLOUNDER *Paralichthys olivaceus* FOR THE
LAST 20 YEARS IN KOREA
AQUACULTURE WITHOUT FRONTIERS  
Friday, February 26 8:30 - 10:00  Champagne 1  
Chair: Roy Palmer

8:30  Paul Wills  
AN INTRODUCTION TO FAU AND NEW COLLABORATION WITH AwF

8:45  Marty Riche  
FARMER TO FARMER ACTIVITY

9:00  Antonio Garza de Yta  
AwF AND LATIN AMERICA

9:15  Roy Palmer  
AwF UPDATE

USTFA INDUSTRY FORUM  
Friday, February 26 8:30 - 10:00  Concorde A  
Chair: Gary Fornshell

8:30  Gregory D. Wiens  
PRODUCTION-SCALE FARM EVALUATION OF THE ARS-FP-R LINE OF BCWD RESISTANT RAINBOW TROUT

8:45  Ken Overturf  
IMPROVING GROWTH AND UTILIZATION OF PLANT-BASED FEEDS IN RAINBOW TROUT

9:00  Jeffrey M. Hinshaw  
CHALLENGES AND SOLUTIONS IN THE EASTERN U.S. TROUT INDUSTRY – STATUS AND EMERGING ISSUES

9:15  Gary Fornshell  
CHALLENGES AND SOLUTIONS IN THE WESTERN U.S. TROUT INDUSTRY – STATUS AND EMERGING ISSUES

9:30  Sean Nepper  
UNITED STATES TROUT FARMERS ASSOCIATION BUSINESS MEETING

AQUACULTURE AND CONTAMINANTS  
Friday, February 26 8:30 - 12:30  Champagne 2  
Chair: Aswani Volety

8:30  Aswani Volety, Julien Vignier, John Roberts, Ai Ning Loh, Myrina Boulaiz, Ben Woodall, Philippe Soudant, Fu-Lin Chu, Lesli Haynes, Jeff Morris, Claire Lay, Michelle Krasnec, Joshua Lipton  
EFFECTS OF DEEPWATER HORIZON OIL AND DISPERSANTS ON VARIOUS LIFE STAGES OF OYSTERS Crassostrea virginica

8:45  CANCELLED
9:00  Jana Pickova  
LIPIDS AND OMICS IN AQUACULTURE

9:15  Salma Sultana, Fakhira Jabeen, Tayyaba Sultana, Shahid Mahboob Rana  
DNA FRAGMENTATION IN DIFFERENT FISH SPECIES: A POLLUTION ASSESSMENT TOOL FOR AQUATIC TOXICOLOGY

9:30  Shahid Rana, Ghazala Ghazala, Khalid Al-Ghanim  
CHOLINESTERASES: CHOLINERGIC BIOMARKERS FOR THE DETECTION OF SUBLETHAL EFFECTS OF ORGANOPHOSPHOROUS AND CARBAMATES IN *Catla catla*

9:45  Giulia Chemello, Leonardo Mancini, Jessica de Almeida Roger, Massimiliano Magro, Davide Baratella, Emanuela Bonaiuto, Giuseppe Radaelli, Anna Paola Fifi, Stefania Morandi, Daniela Bertotto, Sabrina Mantilacci, Fabio Vianello, Ike Olivotto  
NANOTECNOLOGY AS A NEW METHOD FOR ANTIBIOTIC MANAGEMENT IN AQUACULTURE

10:00 BREAK

10:30  Rafael Cuevas Uribe, Steven Mims  
BIOACCUMULATION OF CONTAMINANTS IN MARKET-SIZE HYBRID STRIPED BASS GROWN IN RECLAIMED WATER

10:45  Dong-Fang Deng, Weifang Wang, Silas Hung  
EFFECT OF DIETARY SELENOMETHIONINE ON JUVENILE WHITE STURGEON *Acipenser transmontanus*: RESPONSE OF STRESS PROTEIN (HSP70) AND APOPTOSIS (CASPASE 3/7)

**INCREASING PROFITABILITY THROUGH BETTER ANIMAL HEALTH**
Friday, February 26  8:30 - 12:30  Concorde B  
Chair: Kathleen Hartman

8:30  Carole Engle  
ECONOMICS OF HEALTH

9:00  Jim Parsons  
AQUATIC CERTIFICATION AND COMPARTMENTALIZATION PROCESS AS IT RELATES TO SALMONID EGG EXPORT

9:30  Hugh Mitchell  
IS IT COST-EFFECTIVE TO TRY VACCINATING MY FISH...OR NOT?  HOW DO I DECIDE?

10:00 BREAK

10:30  Joe Pawlak  
THE SECRET COSTS OF IGNORING FISH HEALTH – A PRODUCER’S PERSPECTIVE
11:00 Jonathan van Senten
ECONOMIC ANALYSIS OF POTENTIAL EFFECTS OF A FEDERAL MODEL OF AQUATIC ANIMAL HEALTH ON THE U.S. BAIT AND SPORTFISH INDUSTRY

11:30 David Straus
TREATING CATFISH DISEASES: WALKING THE LINE BETWEEN EXCESS AND MODERATION

EVALUATING NATURAL RESOURCE USE IN AQUACULTURE
Friday, February 26  8:30 - 12:30  Burgundy
Chair: Aaron McNevin

8:30 Randall Brummett
EFFICIENCY IN AQUACULTURE

8:45 Ahmed Kablan
HUMAN NUTRITION AND NATURAL RESOURCE IMPLICATIONS IN AQUACULTURE

9:00 Stephanie Rakels
THE ROLE OF AQUACULTURE INNOVATION IN THE CONSERVATION OF NATURAL RESOURCES

9:30 Tinh Huynh Quoc
PRODUCTIVITY AND NATURAL RESOURCE DEPENDENCE IN THE VIETNAMESE SHRIMP AQUACULTURE SECTOR

9:45 Rawee Viriyatum
NATURAL RESOURCE USE FOR SHRIMP AQUACULTURE IN THAILAND

10:00 BREAK

10:30 Carole Engle
THE BUSINESS CASE FOR ENVIRONMENTALLY SUSTAINABLE AQUACULTURE PRODUCTION

10:45 Francisco Saraiva Gomes
NATURAL RESOURCE SUSTAINABILITY AND PRESERVATION OF FINANCIAL CAPITAL IN AQUACULTURE

11:00 DISCUSSION

11:15 Claude E. Boyd
RESOURCE USE – AQUACULTURE-ENVIRONMENTAL TRADE-OFFS

11:30 John Hargreaves
ECOSYSTEM SERVICE TRADEOFFS IN AQUACULTURE

11:45 DISCUSSION

12:00 Shivaun Leonard
CHALLENGES OF KEY INDICATORS EFFECTING EFFICIENCIES OF SMALL SCALE AND COMMERCIAL FISH FARMERS IN AFRICA

12:15 Claude E. Boyd
ADDRESSING NATURAL RESOURCE USE EFFICIENCY IN AQUACULTURE CERTIFICATION
MODELING COASTAL AQUACULTURE FOR SITING AND MANAGEMENT
Friday, February 26     8:30 – 12:30     Concorde C
Chairs: James Morris, Joao Ferreira

8:30     Kenneth Black, Trevor Carpenter, Kevin Black
PREDICTING BENTHIC EFFECTS FROM MARINE CAGE AQUACULTURE – NEW DEPOMOD

8:45     Kenneth Riley, J.E. Jack Rensel, Carol Price, James Morris
AN ENVIRONMENTAL MODEL FOR AQUACULTURE IN THE DEEP OCEAN – ESTIMATING THE FATE OF WASTE NUTRIENTS AND PARTICULATES

9:00     Fred Page, Susan Haigh, Blythe Chang, Randy Losier
APPLICATION OF COASTAL OCEANOGRAPHIC TRANSPORT, DISPERSAL AND DEPOSITION MODELS TO FINFISH AQUACULTURE REGULATION IN ATLANTIC CANADA

9:15     Lars Asplin, Ingrid A. Johnsen, Øivind Strand
MODELING FOR DECISION MAKING OF SITING AND MANAGEMENT IN NORWEGIAN AQUACULTURE

9:30     James Morris, Kenneth L. Riley, J.E. Jack Rensel
MODELING OFFSHORE AQUACULTURE IN THE SOUTHERN CALIFORNIA BIGHT: APPLICATION OF AQUAMODEL FOR THE LARGEST PROPOSED FISH FARM IN THE U.S.

10:00    BREAK

BEYOND THE HIGH WATER MARK: APPLICATION OF AN ECOSYSTEM MODEL FRAMEWORK FOR INTEGRATED CATCHMENT MANAGEMENT IN LOUGH FOYLE

10:45    Jon Grant, Jeff Barrell, Francisco Bravo, Anne McKee
THE INTEGRATION OF HABITAT INTO MANAGEMENT MODELS OF AQUACULTURE ECOSYSTEMS

11:00    Eric Chapman, Carrie Byron, Di Jin, Tracey Dalton
DETERMINING SYSTEM CARRYING CAPACITY FOR SUSTAINABLE RESOURCE MANAGEMENT USING AN INTEGRATED ECOLOGICAL-ECONOMIC MODELING FRAMEWORK

11:15    DISCUSSION
ONE HEALTH EPIGENOMICS: FROM SEDIMENT TO PEOPLE
Friday, February 26  8:30 - 3:00  Chablis
Chair: Acacia Alcivar-Warren

The goal of the “ONE HEALTH Epigenomics: From Sediment to People” session is to start a dialogue between ecologists, plant and animal scientists, shrimp industry, and public health professionals about the need to incorporate environmental epigenomics tools in long-term assessments of health risks.

Moderators: Chika Ikeogunau, Maria Leticia Arenas, Raquel Silveira, Amutha Chinnaiah, Acacia Alcivar-Warren, Sonia Soto-Rodriguez

8:30 Acacia Alcivar-Warren
WELCOME / INTRODUCTION - RECOGNITION TO WINNERS OF ‘JOHNNIE CASTRO MONTEALEGRE AWARDS’, AND COMMENTS ABOUT HEALTH CONSIDERATIONS REGARDING HORIZONTAL TRANSFER OF MICROBIAL TRANSGENES PRESENT IN GENetically MODIFIED CROPS, AND THE RISKS OF USING Bacillus thuringiensis FOR MOSQUITO CONTROL NEAR SHRIMP FARMS

8:45 Acacia Alcivar-Warren, Jennifer Ninghuuiyi Warren, Mulan Yang
ONE HEALTH Epigenomics - A GLOBAL EDUCATIONAL INITIATIVE

9:00 Diego Alejandro Tigrero, Acacia Alcivar-Warren, Miriam Alcivar Arteaga, Carlos Mejia, Jorge Romero, Gober Asuncion, Mayra Galindo, Sofia Figueroa Zambrano, Oscar Jaen, Christian Saltos, Daniela Espinoza, Christian Alcivar Navarrete
TESTING GLYPHOSATE, Bacillus thuringiensis, MICROBIAL TRANSGENES PRESENT IN GENetically MODIFIED CROPS, METALS AND OTHER CONTAMINANTS OF CONCERN ASSOCIATED WITH MICROCEPHALY & NEURAL TUBE DEFECTS, IN SEDIMENT OF MANGROVES AND SHRIMP PONDS – A LONG-TERM ASSESSMENT OF HEALTH RISKS TO THE ENVIRONMENT AND ANIMALS IN LIGHT OF CLIMATE CHANGE

9:15 Amutha Chinnaiah, Abhijit Manna, Periasamy Subramanian
EXPERIMENTAL EVIDENCES OF GLYPHOSATE HERBICIDE IN Oreochromis mossambicus AND ITS BIOREMEDIATION THROUGH ENZYME-NANOPARTICLE CONJUGATES

9:30 Chika Ikeogunau
EPGENETIC MODIFICATIONS INDUCED BY ENDOCRINE DISRUPTING CHEMICALS (EDCs) PRESENT IN SOIL, SEDIMENT OF MANGROVES AND SHRIMP PONDS, SHELLFISH, FISH AND PEOPLE FROM TROPICAL COUNTRIES – AN IN-DEPTH LITERATURE REVIEW

10:00 BREAK

Moderators: Chika Ikeogunau, Maria Leticia Arenas, Raquel Silveira, Amutha Chinnaiah, Acacia Alcivar-Warren, Sonia Soto-Rodriguez

DYNAMIC OF Vibrio parahaemolyticus AND PirA AND PirB TOXINS DURING THE INFECTIOUS PROCESS OF ACUTE HEPATOPANCREATIC NECROSIS DISEASE (AHPND) IN Litopenaeus vannamei
11:00 Xiaojun Zhang, Jianbo Yuan, Chengzhang Liu, Fuhua Li, Jianhai Xiang
GENOME SEQUENCING OF THE PACIFIC WHITE SHRIMP *Litopenaeus vannamei*

11:15 Weidong Bao, Kenji K. Kojima, Oleksiy Kohany
HOW IT WORKS: REPBASE UPDATE AND REPBASE REPORTS

11:45 Jianbo Yuan, Xiaojun Zhang, Chengzhang Liu, Fuhua Li, Jianhai Xiang
HORIZONTALLY TRANSFERRED GENES IN THE GENOME OF PENAEOIDA SHRIMPS *Litopenaeus vannamei* AND *Fenneropenaeus chinensis*

12:00 Acacia Alcivar-Warren, Sonia Soto-Rodriguez, Jianhai Xiang, Bruno Gomez-Gil, Jian-Bo Yuan
TRANSGENERATIONAL EPIGENETIC INHERITANCE (TgEI) AND HORIZONTAL GENE TRANSFER (HGT): THE TRANSPOSASES OF EMS-CAUSING VIBRIOS (*Vibrio parahaemolyticus*, *V. harveyi*), MICROBIAL TRANSGENES (*Bacillus thuringiensis*), AND SPF *Litopenaeus vannamei* FROM HAWAI, USA

12:30 LUNCH

Moderators: Chika Ikeogunau, Maria Leticia Arenas, Raquel Silveira, Amutha Chinnaiah, Acacia Alcivar-Warren, Sonia Soto-Rodriguez

IS THERE A GENETIC TRACE OF SHRIMP AQUACULTURE ON WILD POPULATIONS IN MEXICO?

1:45 Acacia Alcivar-Warren
PRELIMINARY EVIDENCE OF GENOME REARRANGEMENTS IN SPF *Litopenaeus (Penaeus) vannamei* OF THE UNITED STATES AFTER INTRODUCTION OF WSSV-RESISTANT STOCKS FROM MEXICO

2:15 Diego Alejandro Tigrero, Acacia Alcivar-Warren
MEETING WITH COLLABORATORS OF THE ‘ONE HEALTH Epigenomics EDUCATIONAL INITIATIVE’, TO DISCUSS A COHORT FOR LONG-TERM RESEARCH TO TEST THE HYPOTHESIS THAT EDCs ARE ASSOCIATED WITH DIABETES AND NEURAL TUBE DEFECTS.

**CATFISH AND CATFISH HYBRIDS**
Friday, February 26  8:30 - 3:00  Versailles 2
Chairs: Luke Roy, Nagaraj Chatakondi

8:30 Herbert E. Quintero Fonseca, D. Allen Davis
BROODSTOCK NUTRITION: ENHANCEMENT OF EGG QUALITY IN CHANNEL CATFISH FOR HYBRID CATFISH PRODUCTION

8:45 Sheng Dong, Dayan A. Perera, Ahmed S. Alsaqufi, Ramjie Y. Odin, Guyu Qin, Rex A. Dunham
COMPARISON OF TWO STRAINS OF CHANNEL CATFISH *Ictalurus punctatus* FOR INDUCED OVULATION IN THE EARLY SPAWNING SEASON TO PRODUCE CHANNEL CATFISH *Ictalurus punctatus* ♀ × BLUE CATFISH *Ictalurus furcatus* ♂ HYBRID CATFISH EMBRYOS
9:00 Brian Bosworth, Sylvie Quiniou, Nagaraj Chatakondi
EFFECT OF SEASON AND STRAIN ON TESTES DEVELOPMENT AND SPERM QUALITY IN 5 YEAR OLD MALE BLUE CATFISH

9:15 William M. Childress, Terrence R. Tiersch
FIELD TESTING OF A HIGH-THROUGHPUT MOBILE CRYOPRESERVATION LABORATORY FOR AQUATIC SPECIES

9:30 Nagaraj Chatakondi, Roger Yant, Rex Dunham
INFLUENCE OF STRAIN OF SIRE ON CHANNEL × BLUE F1 HYBRID CATFISH FRY PRODUCTION AND FINGERLING PERFORMANCE UNDER FARM CONDITIONS

10:00 BREAK

10:30 Forrest Wynne, John Murdock, Rick Murdock
IRRIGATING LATE SUMMER CORN USING CHANNEL CATFISH Ictalurus punctatus PRODUCTION POND WATER IN WESTERN KENTUCKY: DEMONSTRATION PROJECT RESULTS

10:45 C. Bauer Duke III, Kayla McCoy, Nathan Stone, Sindhu Kaimal
CATFISH-ONLY Ictalurus punctatus STOCKING RATES FOR FERTILIZED FARM PONDS: ARE CURRENT STOCKING RECOMMENDATIONS SUFFICIENT?

11:00 Trevor P. Luna, Jeonghwan Park, Luke A. Roy, Anita M. Kelly
PERFORMANCE EVALUATION OF SPLIT-POND SYSTEMS OPERATED AT TWO DIFFERENT WATER TURNOVER RATES FOR PRODUCTION OF HYBRID CATFISH Ictalurus punctatus × I. furcatus

11:15 Rex Dunham, Nagaraj Chatakondi, Terry Hanson, David Drescher, Dalton Robinson, Kamal Gosh, William Bugg
INTEGRATED APPROACHES TO REDUCING INDIVIDUAL VARIABILITY AND PROVIDING YEAR ROUND HARVEST OF CHANNEL-BLUE HYBRID CATFISH

11:30 Ahmed Elaswad, Rex Dunham
EVALUATION OF RESISTANCE TO Ichthyophthirius multifiliis IN CECROPIN TRANSGENIC CHANNEL CATFISH Ictalurus punctatus AND CHANNEL CATFISH FEMALE × BLUE CATFISH MALE Ictalurus furcatus HYBRIDS

11:45 Atim Chelly Okoko, Chukwuma O. Ofor
EFFECT OF FEEDING AND FEED PREFERENCE ON GROWTH PERFORMANCE OF AFRICAN CATFISH Clarias gariepinus FED PELLETED FEED, SUPPLEMENTED WITH LIVE TILAPIA Oreochromis niloticus FRY IN CONCRETE TANKS

12:00 Ahmed Elaswad, Rex Dunham, Karim Khalil
INDUCED MUTATIONS IN TICAM 1 GENE OF CHANNEL CATFISH Ictalurus punctatus

12:30 LUNCH

1:30 Suguna Tummala
BREEDING SEED PRODUCTION AND HATCHERY MANAGEMENT OF ASIAN CATFISH Clarias batrachus

1:45 Chika F. Ikeogu, C.I. Nsofor, I. O. Igwilo, A.A. Ngene
THE EFFECT OF CRUDE OIL ON THE BLOOD PARAMETERS AND SERUM ENZYMES OF THE AFRICAN CATFISH Clarias gariepinus
2:00  Hakeem Fashina-Bombata, Ekaete Anwa-Udondiah, Fatai Owodeinde, IPrince Ndimele, Zainab Ayeni
PROTOCOL FOR BREEDING AND HATCHERY PRODUCTION OF FRY OF SILVER CATFISH Chrysichthys nigrodigitatus (LACEPEDE)

2:15  Nermeen Y. Abass, Rex A. Dunham
COMPARISONS OF CHANNEL CATFISH Ictalurus punctatus, BLUE CATFISH Ictalurus furcatus, AND CHANNEL CATFISH I. punctatus ♀ × BLUE CATFISH I. furcatus ♂ HYBRID FOR TOLERANCE OF HIGH SALINITY

2:30  Chika F. Ikeogu, M.O Okoli, U.M. Adi, J.C. Nwachukwu
GROWTH PERFORMANCE OF Clarias gariepinus RAISED WITH COMMERCIAL CATFISH FEED BRANDED TOP FEEDS UNDER MONO CULTURE SYSTEM IN THE UNIZIK FARM

WATER QUALITY
Friday, February 26  8:30 - 12:30 Vendome B
Chairs: Ken Semmens, Rafael Cuevas Uribe

8:30  Yangxue Han, Claude E. Boyd
A BICARBONATE TITRATION LIME REQUIREMENT METHOD FOR AQUACULTURE POND SOILS

8:45  Benjaporn Somridhivej, Claude E. Boyd
AN ASSESSMENT OF FACTORS AFFECTING THE RELIABILITY OF THE TOTAL ALKALINITY MEASUREMENT

9:00  David Straus, Cynthia Ledbetter, Bradley Farmer, Thomas Meinelt, Dibo Liu
ACUTE TOXICITY OF PERACETIC ACID TO FISH

9:15  Mohammad Alam, Jan Czekajewski, Timothy Hans, Konrad Dabrowski
HYPOXIC THRESHOLD FOR BIGHEAD CARP Hypophthalmichthys nobilis JUVENILES: SIZE DOES REALLY MATTER

9:30  Sindhu Kaimal, Anita M. Kelly
EFFECTS OF CROWDING AND WATER FLOW ON GOLDEN SHINERS Notemigonus crysoleucas IN FLOW TANKS

9:45  Lauren Jescovitch, Claude Boyd
WATER QUALITY MANAGEMENT IN WASTE-TREATMENT SECTIONS OF SPLIT POND AQUACULTURE

10:00  BREAK

10:30  Hisham A. Abdelrahman, Claude E. Boyd
THERMAL STRATIFICATION IN SHALLOW AQUACULTURE PONDS: RESPONSE TO TURBIDITY AND AERATION

10:45  Kenneth J. Semmens
TREATED COAL MINE WATER FOR AQUACULTURE: OBSERVATIONS FROM TWELVE YEARS OF RESEARCH AND DEMONSTRATION
11:00 Manuel Segovia, Juan P. Gonzalez
EFFECT OF FOUR PRETREATMENTS IN THE NITROGEN AND PHOSPHORUS MASS BALANCE FROM EFFLUENTS OF A RECIRCULATING AQUACULTURE SYSTEM

11:15 Kenneth Semmens, Karen Buzby
USE AND REUSE OF A GEOTUBE® TO CAPTURE SOLID WASTE IN A FLOWING WATER SYSTEM

11:30 Rick Johnson
SUSTAINABILITY THROUGH ADVANCED BIOLOGICAL TREATMENT OF RECIRCULATING AQUACULTURE SYSTEM EFFlUENT

11:45 Allison Culbreth, Shawn Shifflett, Dennis Hazel, Elizabeth Nichols, Harry Daniels
EVALUATION OF THE TREATMENT EFFICIENCY OF A HYBRID POPLAR Populus spp. VEGETATIVE FILTER ON HYBRID STRIPED BASS Morone chrysops × Morone saxatilis POND EFFLUENTS

TILAPIA
Friday, February 26  8:30 - 5:00  Versailles 3
Chair: Kevin Fitsimmons

8:30 Nassrin Mashaii, Farhad Rajabipour, Mohammad Mohammadi, Habib Sarsangi, Ahmad Bitaraf, Mostafa Sharif-Rohan, Homayun Hossein-Zadeh
REPRODUCTIVE BIOLOGY OF NILE TILAPIA Oreochromis niloticus UNDER THE BRACKISH WATER CULTURE CONDITION, IRAN

8:45 Brian Nerrie, Chris Mullins
PRODUCTION OF OPTIMAL PORTION SIZE FOR HEALTHY AFFORDABLE TILAPIA IN URBAN FOOD DESERT

9:00 Suman Bhusan Chakraborty
EFFECTS OF Basella alba LEAF METHANOL EXTRACT AND GENISTEIN ON GROWTH AND NON-SPECIFIC IMMUNE RESPONSE IN Oreochromis niloticus

9:15 Scott A. Salger, David A. Baltzegar, Jimi Reza, Md. Abdul Wahab, Russell J. Borski
ASSESSMENT OF PULSED FEEDING STRATEGIES ON THE GUT METAGENOME OF TILAPIA IN POND CULTURE

9:30 Veronica Valadez-Rocha, Alberto Arreola-Valle, Oscar M. Justo Martínez, Omar A. Fragoso Sánchez
WIRELESS SENSOR NETWORKS TO SUPPORT AN INNOVATIVE REMOTE TECHNICAL SERVICE FOR TILAPIA INTENSIVE FARMS IN CENTRAL GULF OF MEXICO

9:45 Olubunmi T. Agbebi, Babatunde Ilori, Olutunde Durosoyo, Adeola Adegbe, Hammed Ajibade, Oluwatumininu Adebambo, Olanrewaju Adeosun, Joy Echefu, Biola Ajibike
GENETIC DIVERSITY AND POPULATION STRUCTURE OF FOUR TILAPIA FISH SPECIES IN NIGERIA

10:00 BREAK
10:30 Ramjie Y. Odin, Remedios B. Bolivar
CAGE CULTURE OF NILE TILAPIA Oreochromis niloticus USING DIFFERENT FEEDING STRATEGIES

10:45 Tyler Stoneham, David Kuhn, Daniel Taylor, Sean O’Keefe, Stephen Smith, Delbert Gatlin
PRODUCTION OF OMEGA-3 ENRICHED TILAPIA THROUGH THE USE OF A COMMERCIALLY AVAILABLE Schizochytrium sp. ADDITIVE

11:00 Zenith Gaye A. Orozco, Satoshi Soma, Toyoji Kaneko, Soichi Watanabe
RESPONSE OF PEPTIDE TRANSPORTER (SLC 15A1) IN THE INTESTINAL EPITHELIAL CELLS OF TILAPIA Oreochromis mossambicus TO FASTING AND REFEEDING

11:15 David E. Brune
TILAPIA IN HIGH-RATE AQUACULTURE PROCESSES

11:30 Bartholomew Green
STOCKING RATE EFFECTS IN A TILAPIA BIOFLOC PRODUCTION SYSTEM

11:45 Kevin Fitzsimmons
SUPPLY AND DEMAND IN GLOBAL TILAPIA MARKETS 2016

12:30 LUNCH

GENETIC IMPROVEMENT OPTION AND GROWTH PERFORMANCE OF THREE CULTURABLE TILAPIA SPECIES IN A COASTLINE TIDAL FED POND

1:45 Md Ibrahim, Jesse Rinard, Ahmed Mustafa
EFFECTS OF Phyllanthus niruri SUPPLEMENTED DIET ON THE MODULATION OF STRESS IN TILAPIA, REARED IN INLAND RECIRCULATING AND AQUAPONICS SYSTEMS

2:00 Abdul Mateen, Noor us Saba
GROWTH, BODY COMPOSITION AND ANTIOXIDANT ENZYME PROFILE OF Oreochromis niloticus AS INFLUENCED BY VITAMIN E FORTIFIED FEED

2:15 Md Mursalin Khan, Destin Furnas, Elliott Blumenhal, Ahmed Mustafa
IN VITRO ANALYSES OF LYMPHOCYTE PROLIFERATION EXTRACTED FROM SPLEEN AND THYMUS OF NILE TILAPIA USING NATURAL ELDERBERRY ALONG WITH MUTAGENS

2:30 Esayas W. Tekle, N. P. Sahu
GROWTH AND ANTIOXIDATIVE ENZYMES RESPONSE OF NILE TILAPIA Oreochromis niloticus FINGERLINGS TO ETHANOLIC EXTRACT OF Moringa oleifera FLOWER

2:45 Adetola Jenyo-Oni, Emmanuel Ajani, Tolulope Owolawi
THE USE OF LYOPHILIZED TESTES FROM BULL Bos indicus RAM Ovis aries AND BUCK Capra hircus FOR MASCELINIZATION OF NILE TILAPIA Oreochromis niloticus L.

3:00 BREAK
3:30  Qing Pan, Cuiying Chen
      N-3 ESSENTIAL FATTY ACIDS IN NILE TILAPIA Oreochromis niloticus: DIETARY
      LINOLENIC ACID HAS GREAT EFFECTS ON LINOLEIC ACID BIOCONVERSION

3:45  Qing Pan, YuWen Tan, ShuangLong Wu, Feng Chen
      THE STUDY ON SELENIUM NUTRITION: OPTIMUM DIETARY REQUIREMENT OF
      SELENIUM IN JUVENILE NILE TALIPIA Oreochromis niloticus

4:00  Kevin Fitzsimmons
      AMERICAS TILAPIA ALLIANCE ANNUAL MEETING

SHRIMP BREEDING AND GENETICS
   Friday, February 26   10:30 - 12:30   Champagne 1
   Chair: Dean Jerry

10:30 Greg J. Coman, Brad J. Argue
      DOMESTICATION AND SELECTIVE BREEDING OF Penaeus monodon

11:00 Siuming Chan, Lili Shi, Xiao-Yun Li, Cheng Qui Wang, Shi Ping Yang
      TRANSCRIPTOMIC APPROACH TO IDENTIFY SEX DETERMINATION GENES IN THE
      MALE SHRIMP Fenneropenaeus merguiensis

11:15 Mehar S. Khatkar, Kyall R. Zenger, Jeff Prochaska, Hein van der Steen,
      David B. Jones, Dean R. Jerry, Herman W. Raadsma
      GENOMIC PREDICTION AND GENOME-WISE ASSOCIATIONS IN THE PACIFIC
      WHITELEG SHRIMP Litopenaeus vannamei

11:30 Amir Sagi, Assaf Shechter, Ohad Rosen, Brit Eilam, Dudu Azulay
      ALL-FEMALE CRUSTACEAN AQUACULTURE

TAURINE: CURRENT KNOWLEDGE, FUTURE ROLES IN
       AQUACULTURE
   Friday, February 26   10:30 - 12:30   Champagne 3
   Chair: Guillaume Salze

10:30 Tony Budi Satriyo, Lus M. López, Mario A. Galaviz, Guillaume Salze
      EVALUATION OF DIETARY TAURINE ON BLOOD PARAMETERS, SOMATIC INDICES
      AND LIVER STATUS OF Totoaba macdonaldi

10:45 Ron Johnson, Aaron Watson, Shin-Kwon Kim, Peter Nicklason, Frank Sommers,
      Frederic Barrows
      EFFECTS OF DIETARY TAURINE AND LIPID LEVEL ON GROWTH AND NUTRIENT
      UTILIZATION OF JUVENILE SABLEFISH Anoplopoma fimbria FED ALTERNATIVE
      PLANT PROTEIN FEEDS

11:00 Mary E.M. Larkin, Allen R. Place
      DEVELOPMENT OF A DIETARY TAURINE-DEPENDENT ZEBRAFISH STRAIN

11:15 Rosemary Jagus, Chieh-Lun Liu, Aaron Watson, Allen Place
      ADAPTATION OF A LIVER FISH CELL LINE (ZFL) TO A TAURINE FREE MEDIUM
11:30 Michelle B. Price, Kathleen A. Turano, Frank J. Turano
DEVELOPMENT OF TAURINE-CONTAINING PLANT SEED

11:45 Matt Hawkyard, Kevin Stuart, Mark Drawbridge, Yoav Barr, Chris Langdon, Ben Laurel
METHODS FOR THE TAURINE ENRICHMENT OF LIVE PREY AND THEIR IMPACTS ON MARINE FISH LARVAE

AQUACULTURE AND FISH TECH SEAFOOD UPDATE
Friday, February 26    10:30 - 12:30    Vendome A
Chair: John Ewart

10:30 John Ewart, Doris Hicks
AQUACULTURE AND FISH TECH SEAFOOD UPDATE

Doris Hicks
SEAFOOD SAFETY, PROCESSING AND REGULATION

Doris Hicks
SEAFOOD / AQUACULTURE PRODUCTS IN THE DIET: BENEFITS AND RISK

John Ewart, Doris Hicks
SEAFOOD AND AQUACULTURE ISSUES: COMMUNICATING THE POSITIVE MESSAGE

SALMONIDS
Friday, February 26    10:30 - 3:00    Concorde A
Chair: Erick Sturm

10:30 Ivan Gallego-Alarcon, David García-Mondragon, Ivan Cervantes-Zepeda, Daury Garcia-Pulido
HISTORY OF RAINBOW TROUT Oncorhynchus mykiss PRODUCTION IN THE HIGHLANDS OF CENTRAL MEXICO

10:45 Laura White-Olascoaga, David Garcia-Mondragon, Ivan Gallego-Alarcon, Daury Garcia-Pulido
RAINBOW TROUT Oncorhynchus mykiss PRODUCTION SYSTEMS IN THE MEXICAN HIGHLANDS

11:00 Selene Ortiz-Velazquez, Ivan Gallego-Alarcon, Ivan Cervantes-Zepeda, Daury Garcia-Pulido
RAINBOW TROUT Oncorhynchus mykiss ALBINO BREED IN A RECIRCULATING AQUACULTURE SYSTEM

11:15 Cheyenne Owens, Wendy Sealey, Zachariah Conley, Christopher Myrick
GROWTH OF JUVENILE SNAKE RIVER CUTTHROAT TROUT Oncorhynchus clarkii behnkei FED COMMERCIAL-TYPE DIETS
11:30 Victor Schmidt, Christopher Good, Linda Amaral-Zettler
AN ALTERNATIVE-PROTEIN DIET DOES NOT IMPACT MICROBIAL STABILITY IN SALMON RECIRCULATING AQUACULTURE SYSTEMS

11:45 Fauve Strachan, Chris Kennedy
THE ENVIRONMENTAL FATE AND NON-TARGET EFFECTS OF SEA LICE PESTICIDES USED IN SALMON AQUACULTURE

12:30 LUNCH

1:30 Mahmoud Nafisi Bahabadi
EFFECT OF 17ß-ESTRADIOL, OVARIAN FLUID FREE STEROIDS AND STORAGE DURATION ON GAMETE VIABILITY OF RAINBOW TROUT Oncorhynchus mykiss

1:45 Erick Sturm, Vanessa Lo, Mark Galloway, David Streig, R. Bruce MacFarlane, Sean Hayes
OVAPLANT® USAGE IN A COHO SALMON Oncorhynchus kisutch CAPTIVE BROODSTOCK PROGRAM – TEN YEARS WORTH OF SPAWNING DATA

2:00 Jessica Piesz, Sarah Barker, Ian Bricknell
EFFECTS OF THE SECRETORY/EXCRETORY PRODUCTS OF Lepeophtheirus salmonis ON ATLANTIC SALMON LEUKOCYTE MIGRATION

OYSTERS
Friday, February 26 10:30 - 3:00  Loire
Chairs: Joth Davis, Chris Davis

8:30 John Scarpa, Joe Fox, William Balboa
POTENTIAL FOR OYSTER CULTURE IN TEXAS

8:45 Curtis Gamble
AN EVALUATION OF THE FLOATING CAGE SYSTEM FOR EASTERN OYSTER Crassostrea virginica AQUACULTURE PRODUCTION IN THE NORTHERN GULF OF MEXICO

9:00 CANCELLED

9:15 William C. Walton
CURRENT STATUS OF OYSTER AQUACULTURE ON ALABAMA’S GULF COAST

9:30 Paul Rawson, Karen Pianka
PREVENTATIVE TREATMENTS FOR THE CONTROL OF BLISTER WORM Polydora websteri IN THE EASTERN OYSTER Crassostrea virginica

9:45 Gulnihal Ozbay, Brian Reckenbeil, John Ewart
UTILIZING SHORELINE RIPRAP FOR STOCKING EASTERN OYSTERS Crassostrea virginica

10:00 BREAK

10:30 Don Meritt, Donald Webster, Kennedy Paynter
IT’S A CONSTRUCTION PROJECT: LESSONS LEARNED FROM TWO DECADES OF HATCHERY-BASED OYSTER RESTORATION IN MARYLAND
10:45 Fariborz Ehteshami, Nicholas Romano, Annie Christianus, Mehdi Ebrahimi
Hybridization of *Crassostrea belcheri* ♀ × *C. iredalei♂ improved the survival and growth under hatchery conditions over pure strains

11:00 Melissa Southworth, Roger Mann
So which kids come from which spawning?

11:15 Evan Durland, Chris Langdon, Pierre De Wit, Eli Meyer, George Waldbusser
Breeding Pacific oysters *Crassostrea gigas* for resilience to changing ocean conditions

11:30 David Kuhn, Joe Salisbury, Durrelle Scott, Elizabeth Shadwick, Karen Hudson, AJ Erskine, James Wesson, Daniel Taylor
Protecting the aquaculture industry in the Chesapeake Bay from a dynamic carbonate chemistry environment

11:45 Manuel Segovia, Juan Benavides, Carmen Paniagua
Effect of feeding strategy and carbon dioxide-carbonate system dynamics in the reproductive conditioning of the Kumamoto oyster *Crassostrea sikamea* maintained in a recirculating aquaculture system

12:00 Brian R. Callam, John Supan
Analysis of gonad development by diploid, triploid, and tetraploid eastern oyster *Crassostrea virginica* broodstock in Louisiana

12:15 Abdellah Benabdelmouna, Christophe Ledu
Direct and indirect induction of autotetraploid Pacific oysters *Crassostrea gigas* (Thunberg) using normal diploid eggs: impact on cyto genetic stability

12:30 Lunch

1:30 Anna Priester, Donald Meritt, Kennedy Paynter, Louis Plough, Standish Allen
Effects of salinity change on larval settlement success of the Eastern oyster *Crassostrea virginica*

1:45 Eric Guévéloù, Standish K. Allen, Jr.
Rapid prediction of biochemical composition in Eastern oyster *Crassostrea virginica* using near infrared reflectance spectroscopy

2:00 Edward J. Catapane, Margaret A. Carroll
Histamine in the bivalve *Crassostrea virginica*

2:15 Kennedy Paynter, Drew Needham, Sara Lombardi
Eastern oyster *Crassostrea virginica* heat rates associated with differing oxygen concentrations as measured by minimally invasive electrocardiography

2:30 Sarah K.D. Pease, Kimberly S. Reece, Wolfgang K. Vogelbein
Exposure of the Eastern oyster *Crassostrea virginica* to the harmful algal bloom species *Alexandrium monilatum*

2:45 Clyde L. MacKenzie, Jr.
A comparison of the effects of Hurricane Agnes in 1972 in three major oyster ing locations
SUSTAINABLE AQUACULTURE AND GLOBAL PERSPECTIVE  
Friday, February 26  1:30 - 4:30  Champagne 1  
Chairs: Paul Anderson, Barry Costa-Pierce

1:30  Roy Palmer  
GLOBAL PERSPECTIVES ON SUSTAINABLE AQUACULTURE

1:45  Barry Costa-Pierce  
AN EXPANDED INDUSTRIAL MODEL OF ECOLOGICAL AQUACULTURE AND SUSTAINABLE FISHERIES WILL BE REQUIRED TO MEET THE PROTEIN NEEDS OF THE FUTURE

2:00  Dane Klinger, James Watson, Simon Levin  
FUTURE GLOBAL FINFISH AQUACULTURE UNDER CLIMATE CHANGE

2:15  Kimberly Thompson, Jerry R. Schubel  
MARINE AQUACULTURE IN THE CONTEXT OF THE GLOBAL FOOD SUPPLY

2:30  Daniel Cheney, Bobbi Hudson, David Preikshot, Joao Ferreira, Danna Moore, Suzanne Bricker, Terry King  
DETERMINING SOCIAL AND ECOLOGICAL CARRYING CAPACITIES FOR SOUTH PUGET SOUND, WASHINGTON, USA

3:00  BREAK

3:30  Julie Davis, Laura W. Jodice, William C. Norman  
SUPPORT FOR MARICULTURE AMONG RESIDENTS AND TOURISTS IN SOUTH CAROLINA AND FLORIDA COASTAL COMMUNITIES

3:45  Ivan Cervantes-Zepeda, Ivan Gallego-Alarcon, Daury Garcia-Pulido, Selene Ortiz-Velazquez  
SUSTAINABILITY EVALUATION INDICATORS FOR MEXICAN AQUACULTURE

4:00  Carolina Casanova, Humberto Villarreal, José Naranjo  
SUSTAINABLE DEVELOPMENT AND GOVERNANCE OF AQUACULTURE IN BAJA CALIFORNIA SUR, MEXICO

PREBIOTICS, PROBIOTICS, AND NUTRICEUTICALS  
Friday, February 26  1:30 - 4:30  Champagne 3  
Chairs: Wendy Sealey, Delbert Gatlin III

1:30  Victor Schmidt, Marta Gomez-Chiarri, Chelsea Roy, Linda Amaral-Zettler  
THE INFLUENCE OF ANTIBIOTICS AND PROBIOTICS ON MICROBIOME-MEDIATED DISEASE RESISTANCE IN THE TELEOST Poecilia sphenops

1:45  David Kuhn, Daniel Taylor, Stephen Smith, David Drahos  
EFFECTS OF DIRECT-FED PROBIOTICS AND DISEASE-INDUCED STRESS ON THE METABOLOME OF FISH

2:00  Marlien Schaeck, Freddy Haesebrouck, Wim Van Den Broeck, Annemie Decostere  
PROBIOTIC SELECTION FOR EUROPEAN SEA BASS LARVICULTURE: AN INNOVATIVE APPROACH
FRIDAY

2:15 Dennis McIntosh, Eric Schott, Harold Schreier, Grant Blank
IDENTIFICATION AND ISOLATION OF NOVEL PROBIOTIC BACTERIA FOR USE IN MARINE AQUACULTURE

2:30 Andrea Larsen, Nicole Rhody, Ron Hans, Kevan Main
EFFECT OF A MIXED *Bacillus* PROBIOTIC ON SURVIVAL, GROWTH, AND MICROBIOTA OF COMMON SNOOK *Centropomus undecimalis* LARVAE

2:45 Oscar Galagarza, David Kuhn, Stephen Smith, Daniel Taylor, Joseph Eifert, Robert Williams
INFLUENCE OF A NOVEL PROBIOTIC CANDIDATE ON IMMUNITY AND DISEASE RESISTANCE OF *Pangasius hypophthalmus*

3:00 BREAK

3:30 Francisca George, Akinwale Akinleye, Adeoluwa Akinyemi, Oluwatoyin Afolabi
DEVELOPMENT AND EVALUATION OF THE EFFICACY OF A LOCAL PROBIOTIC IN COMPARISON WITH A COMMERCIAL PROBIOTIC IN THE AFRICAN CATFISH *Clarias gariepinus*

3:45 Fernando Yamamoto, Fernando Jonas Sutili, Delbert M. Gatlin III
THE EFFECT OF DIETARY BETA GLUCAN SUPPLEMENTATION ON THE INNATE IMMUNE RESPONSES OF NILE TILAPIA

**FISH HEALTH**
Friday, February 26   1:30 - 5:00   Champagne 2
Chair: Kathleen Hartman

1:30 Robert Durborow, John Kelso, Jiashuo Ma, Catherine Frederick, Tiffany Ogunsanya, Andrew Redden, Khamisi Campbell, Walter Kahill, Christopher Lyvers
TWENTY-SIX YEAR HISTORY OF FISH DISEASE CASES DIAGNOSED AT THE KENTUCKY STATE UNIVERSITY FISH DISEASE DIAGNOSTIC LABORATORY FROM 1990 THROUGH 2015

1:45 Suja Aarattuthodiayil
FISH CERTIFICATION PROGRAM: A MODEL FROM ARKANSAS

2:00 Timothy Bruce, Michael L. Brown, Regg D. Neiger, Seema Das
IMMUNOMODULATION IN RAINBOW TROUT *Oncorhynchus mykiss* FED BIOPROCESSED SOY DIETS AND CHALLENGED WITH *Flavobacterium psychrophilum*

2:15 Sophia Xu, Juliette Ben Arous, Laurent Dupuis
ADJUVANTS IMPROVE THE PROTECTION CONFERRED BY IMMERSION VACCINES AGAINST YERSINIOSIS IN RAINBOW TROUT

2:30 Nicholas Fargnoli, Timothy Bowden
CIRCADIAN AND SEASONAL RHYTHM OF TOTAL ANTIOXIDANT CAPACITY AND REACTIVE OXYGEN AND NITROGEN SPECIES IN ATLANTIC SALMON *Salmo salar*

2:45 Evelien De Swaef, Wim Van den Broeck, Freddy Haesebrouck, Annemie Decostere
DEVELOPMENT OF THE FIRST STANDARDIZED BIOTIC CHALLENGE MODEL FOR DOVER SOLE *Solea solea*
3:00 BREAK

3:30 Carol Stepien, Lindsey Pierce, Douglas Leaman, Megan Niner, Brian Shepherd
GENE DIVERSIFICATION OF AN EMERGING PATHOGEN: A DECADE OF MUTATION IN A NOVEL FISH VIRAL HEMORRHAGIC SEPTICEMIA (VHS) SUBSTRAIN SINCE ITS FIRST APPEARANCE IN THE LAURENTIAN GREAT LAKES

3:45 Jason Evenhuis, Benjamin LaFrentz
VIRULENCE OF *Flavobacterium columnare* GENOMOVARs IN RAINBOW TROUT *Oncorhynchus mykiss*

4:00 Fausto A. Marinho-Neto, Gustavo S. Claudiano, Cleslei F. Zanelli, Jefferson Y. Aguinaga, Flávio R. Moraes, Julieta R.E. Moraes
EXPERIMENTAL INFECTION OF PACU *Piaractus mesopotamicus* WITH *Aeromonas hydrophila*

4:15 Kay Lwin Tun, Kevin Fitzsimmons, May Myat Noe Lwin, Soe Tun, Yan Naung Tun, Hiroshi Yokoyama, Tomoyoshi Yoshinaga
MYXOZOAN INFECTIONS IN CULTURED MAJOR CARPS IN MYANMAR

4:30 Oystein Evensen, Elin Petterson, Tz-Chun Guo, Aase Mikalsen
RECOMBINATION EVENTS IN POSITIVE STRAND, NON-SEGMENTED SALMON PANCREAS DISEASE VIRUS

4:45 Tingbao Yang, Limin Lu
EXPERIMENTAL STUDY ON THE ECOLOGY OF *Cichlidogyrus sclerosus* (MONOGENEA) ON TILAPIA

WORKSHOP ON PLANNING STRATEGICALLY FOR MARKETING AND FINANCIAL SUCCESS OF AQUACULTURE BUSINESSES
Friday, February 26 1:30 - 5:00 Concorde B
Chair: Carole Engle

1:30 Carole R. Engle, Ganesh Kumar
WORKSHOP ON PLANNING STRATEGICALLY FOR MARKETING AND FINANCIAL SUCCESS OF AQUACULTURE BUSINESSES

This workshop will focus on analysis of several different aquaculture business scenarios. Participants will practice their business analytical skills by working through various alternative solutions for hypothetical aquaculture businesses, based on sets of “records” presented. The emphasis will be on hands-on engagement of participants to increase their ability to analyze business performance each year and make strategic marketing decisions for improvement.

Workshop participants will have up to three hours to scrutinize marketing and financial datasets from which to develop specific short-term marketing, production, and financial goals. Thinking strategically about how to manage production in order to meet the price, volume, and demand characteristics of the business’s key markets is key to business success. Annual scrutiny of financial, biological, marketing, and personnel performance is essential for success in today’s business climate.
AQUACULTURE FOOD SAFETY
Friday, February 26   1:30 - 4:00   Vendome A
Chairs: Brett Koonse, Mike Jahncke

1:30  Chengchu (Catherine) Liu
POST-HARVEST PRACTICES FOR VIBRIO CONTROL IN MOLLUSCAN SHELLFISH

1:45  Brett Koonse
AQUACULTURE FOOD SAFETY AND DISEASE MANAGEMENT…A NEW PARADIGM

2:00  Michael L. Jahncke
ENSURING FOOD SAFETY AND FOOD QUALITY OF HARVESTED AQUACULTURE PRODUCTS

2:15  Kevin F. Yaptenco, Sharmaine N. Pardua, Jonnel Andrew C. Duque,
Ronel S. Pangan
MOISTURE SORPTION ISOTHERMS OF DRIED SEA CUCUMBER Holothuria scabra
FOR PREDICTION OF SHELF LIFE

2:30  Chengchu Liu, David Green
BEST MANAGEMENT PRACTICES FOR FISH HANDLING FROM FARM TO TABLE

2:45  Bjørn Tore Lunestad, Ole Jakob Nøstbakken, Helge Torbjørn Hove, Ingvild Eide
Graff, Amund Måge, Lise Madsen, Rita Hannisdal
MONITORING OF PHARMACEUTICAL SUBSTANCES IN NORWEGIAN FARMED FISH

3:00  Juan Silva
AQUACULTURE FOOD SAFETY PROGRAMS IN THAILAND AND OTHER COUNTRIES CURRENTLY WORKING WITH