

AQUACULTURE



AMERICA 2024

MONDAY, February 19

PLENARY SESSION

Monday, February 19 8:00 AM - 10:00 AM Salon C

Chair: Anita Kelly

8:00 WELCOME

8:10 AWARDS

8:50 STUDENT SPOTLIGHT

John P. Conto, Alexander Gregory, Patrick Blaufuss, Jacob Peterson, Ryan Newton, Kurt A. Rosentrater, Dong-Fang Deng

IMPACT OF DIETARY LIPID-TO-CARBOHYDRATE RATIOS ON GROWTH PERFORMANCE, HEALTH, AND HEAT SHOCK TOLERANCE IN JUVENILE YELLOW PERCH *Perca flavescens*

Chaya Gaberria, Michael Phelps

TEMPORARY RESCUE OF DEAD-END GENE FUNCTION IN RAINBOW TROUT *Oncorhynchus mykiss* BROODSTOCK

Heather King, Eric Saillant, William Walton, Huiping Yang, Leslie Sturmer, Christopher Hollenbeck, John Scarpa, Brian Callam, Jim Stockel, Scott Rikard, Megan Gima, Jason Stannard, Kelly Lucas, Andrea Tarnecki
PEDIGREE RECONSTRUCTION AND ESTIMATION OF GENETIC PARAMETERS IN GULF OF MEXICO EASTERN OYSTER FAMILIES REARED COMMUNALLY

PLENARY TALKS

9:10 Robert Jones

NATURE-POSITIVE AQUACULTURE: PARTNERING WITH FARMERS TO ACHIEVE ENVIRONMENTAL OUTCOMES

9:35 Loni Greninger

ANCIENT TRIBAL STEWARDSHIP, CONTEMPORARY TRIBAL AQUACULTURE

TILAPIA

Monday, February 19 11:00 AM - 12:30 PM Room 1

Chair: Kevin Fitzsimmons

MONDAY

- 11:00 Mohamed Salem**, Doaa M. Elsisy, Sara O. Makled, Heba M. Abdel-Ghany
DIETARY INCLUSION OF YUCCA AND BACILLUS SUBTILIS; A WAY TO
MODULATE AMMONIA DISCHARGE, GROWTH PERFORMANCE, IMMUNITY
AND CYTOKINES GENE EXPRESSION OF NILE TILAPIA *Oreochromis niloticus*
- 11:15 Cole Daleiden**, Noel Novelo, Jeffrey Warner, Ayomide Taiwo
EVALUATION OF GROWTH AND SEX PROPORTIONS IN THREE STRAINS OF
NILE TILAPIA *Oreochromis niloticus* PRODUCED BY TWO METHODS OF SEX
CONTROL
- 11:30 Kevin Fitzsimmons**
2023 GLOBAL REVIEW OF TILAPIA PRODUCTION AND MARKETS

ENVIRONMENTAL CONTRIBUTED SESSION

Monday, February 19 11:00 AM - 12:30 PM Room 16

Chair: Omolola Betiku

- 11:00 Ji-sook Park**, JeongHwa Hwang, Na Young Lee, Hamin Choi, Qikun Xing,
Jang Kyun Kim
EVALUATION OF CARBON DIOXIDE REMOVAL(CDR) POTENTIAL OF
SEAWEED AQUACULTURE AND BLOOMS
- 11:15 Jeonghwa Hwang**, Qikun Xing, Ji-Sook Park, Youngseok Han, Seongjin Hong,
Youn-Jung Kim, Jang K. Kim
GROWTH, PHOTOSYNTHESIS, TOXINS (OA AND DTX), AND GENES OF THE
DINOFLLAGELLATE ALGAE *Prorocentrum lima* UNDER NUTRIENT DEFICIENCY
- 11:30 Na Young Lee**, Ji-Sook Park, Qikun Xing, Youngcheol Park, Jang Kyun Kim
INFLUENCE OF *Sargassum horneri* EXTRACT ON THE GERMINATION OF
SALTMARSH PLANTS *Suaeda maritima* AND *Salicornia herbacea*
- 11:45 Olanrewaju Badmus**, Emmanuel Menyoli
NIGERIA'S NEW BLUE ECONOMY MINISTRY AND MARINE RESOURCES:
A PANACEA FOR SUSTAINABLE ECONOMY GROWTH

5TH ANNUAL U.S. MARINE FINFISH AQUACULTURE SESSION

Monday, February 19 11:00 AM - 4:30 PM Room 3

Chairs: Marty Riche, Sahar Mejri, Omolola Betiku

- 11:00 Sagun Chhetri**, Andrew J. Ray
THE EFFECT OF STOCKING DENSITY ON THE PRODUCTION AND HEALTH OF OLIVE FLOUNDER *Paralichthys olivaceus* IN NURSERY-LEVEL RAS
- 11:15 Abigail K. Scro**, Sandra K. Remson, Roxanna M. Smolowitz, Michael O'Neill, Andrew L. Rhyne, Galit Sharon, Charles J. Innis
EARLY PATHOGEN DETECTION THROUGH WATER SAMPLING OF AQUACULTURE SYSTEMS
- 11:30 Alejandro Castillo**, Iris Thompson, Florencio Visuette, Jessica Azofeifa, Jorge Alarcón
CHARACTERIZATION OF MONOSEX COBIA *Rachycentron canadum* GROWTH AND YIELD FOR COMMERCIAL AQUACULTURE
- 11:45 Kevin Stuart**, Mark Drawbridge
FIRST CONTROLLED SPAWNING FOR CALIFORNIA YELLOWTAIL *Seriola dorsalis*
- 12:00 John Stieglitz**, Ronald Hoenig, Carlos Tudela, Daniel Benetti, Kevan Main, Mark Drawbridge, Kevin Stuart, Marty Riche, Sahar Mejri, Paul Wills
APPLICATIONS AND INSIGHTS OF BIOENERGETICS RESEARCH FOR IMPROVING AQUACULTURE PRODUCTION OF *Seriola* spp.
- 12:15 Li Sun Chin**, Kevin Stuart, Mark Drawbridge, Paul Wills, Sahar Mejri
TIMELINE OF EGG-BROODSTOCK LIPID INCORPORATION IN CALIFORNIA YELLOWTAIL *Seriola dorsalis*
- 12:30 LUNCH**
- 1:30 Yole Buchalla**, Daniel Margulies, Vernon Scholey, Susana Cusatti
TANK CULTURE OF YELLOWFIN TUNA *Thunnus albacares*: REFLECTING ON 27 YEARS OF BROODSTOCK MANAGEMENT AND SUSTAINED YEAR-ROUND SPAWNING FOR RESEARCH PURPOSES
- 1:45 Sahar Mejri**, David Bradshaw, Ben Panitz, Carlie Perricone, Christopher Robinson, Nicole Kirchoff, Li Sun Chin, Fernando Paredes, Ethan Weber, Avery Davis, Marty Riche, Paul S. Wills
REPLACEMENT OF LIVE FOOD (ROTIFERS AND *Artemia*) BY A COMMERCIALY FORMULATED DIET IN MARINE FLORIDA POMPANO *Trachinotus carolinus* LARVAE

- 2:00 Juan Fernando Paredes**, Michael Habte-Tsion, Marty Riche, Sahar Mejri, Paul S. Wills, David J. Bradshaw, Carlie Perricone
EFFECTS OF DIETARY CARBOHYDRATE SOURCE IN FLORIDA POMPANO *Trachinotus carolinus* GROWTH AND NUTRITIONAL PHYSIOLOGY
- 2:15 Radu Popa**
DEVELOPING A SUSTAINABLE BLACK SOLDIER FLY PROTEIN INDUSTRY FOR FISH FEEDS
- 2:30 Juan Fernando Paredes**, Marty Riche, Sahar Mejri, Paul S. Wills, David J. Bradshaw, Radu Popa
NUTRITIONAL EFFECTS OF BLACK SOLDIER FLY LARVAE PROTEIN INCLUSION IN DIETS OF JUVENILE RED DRUM *Sciaenops ocellatus*
- 2:45 Zachary H. Harrison**
NORTH CAROLINA'S SECRET FLOUNDER PONDS: CREATING A SAFE AVENUE FOR A LOCAL WILD-HARVEST LEGEND
- 3:00 Benjamin Young**, Ali AL Shaikhi
SOBAITY SEABREAM *Sparidentex hasta* FARMING IN HIGH-TEMPERATURE CONDITIONS
- 3:15 Ken Riley**
NOAA PANEL DISCUSSION AND LISTENING SESSION

AQUATIC ANIMAL HEALTH

Monday, February 19 11:00 AM - 4:30 PM Salon L

Chairs: Timothy Bruce, Anita Kelly

- 11:00 Ahmed Mustafa**
AQUACULTURE: IT IS TIME TO FOCUS ON THE QUALITY
- 11:15 Salma Sultana**, Maria Khalid, Tayyaba Sultana
HEMATOLOGICAL EVALUATION OF *Labeo rohita* INHABITING DIFFERENT ENVIRONMENTS
- 11:30 Tayyaba Sultana**, Tahreem Niaz, Salma Sultana
INDUSTRIAL EFFLUENTS INDUCED HISTOPATHOLOGICAL ALTERATIONS IN VARIOUS ORGANS OF MAJOR CARPS
- 11:45 Jaypee S. Samson**, Katrina Kulesh, David Rowley, David Nelson, Marta Gomez-Chiari
SCREENING OF POTENTIAL PATHOGENIC AND PROBIOTIC BACTERIA FROM BIVALVE SHELLFISHES

- 12:00 Ron Hans**, Nicole Rhody, Phil Gravinese, Roy Yanong
EFFICACY EVALUATION OF SELECTED IMMERSION ANESTHETIC AGENTS
ON *Menippe mercenaria*
- 12:15 Ali Parsaeimehr**, Kelvin F. Ofori, Gulnihal Ozbay
HARMONY AND HAZARDS: A COMPARITIVE STUDY OF *Vibrio* spp. IN
Crassostrea virginica AS PROTECTORS AND POTENTIAL PERILS IN COASTAL
ENVIRONMENTS
- 12:30 Rob Hudson**, Dave Bushek, Matthew Bertin, Jacob Cram, Matthew Gray,
Steve Zimmerman, Joshua Reitsma, Gary Wikfors, Meghana Parikh,
Katherine McFarland, Zach Gordon, Marta Gomez-Chiari
NORTHEAST BIVALVE HATCHERY HEALTH CONSORTIUM
- 12:45 LUNCH**
- 1:30 Abdulmalik A. Oladipupo**, Anita M. Kelly, D. Allen Davis, Timothy J. Bruce
OPTIMIZATION OF GROWTH AND IMMUNITY OF CHANNEL CATFISH
Ictalurus punctatus THROUGH DIETARY SUPPLEMENTATION BY A HUMIC
SUBSTANCE OR A PROTEASE COMPLEX
- 1:45 Abdullahi Idowu**, Lindee Mason, Conrad Anderson, Timothy Bruce,
Ahmed Mustafa
DIETARY TRYPTOPHAN SUPPLEMENTATION INCREASES LYSOZYME
ACTIVITY IN CHANNEL CATFISH *Ictalurus punctatus* IN STRESSED,
UNSTRESSED AND DISEASED CONDITIONS
- 2:00 Sammie Miller**, Abdullahi Idowu, Lindee Mason, Isaac Wendel,
Conrad Anderson, Timothy Bruce, Ahmed Mustafa
TRYPTOPHAN MODULATES PHYSIOLOGICAL PROCESSES IN CHANNEL
CATFISH *Ictalurus punctatus* IN STRESSED AND DISEASE CONDITIONS
- 2:15 Allison Wise**, Craig Shoemaker, Troy Bader, Benjamin Beck
EVALUATION OF ORAL ADJUVANTED KILLED *Aeromonas hydrophila*
VACCINES IN CHANNEL CATFISH *Ictalurus punctatus*
- 2:30 Sarah Turner**, Jacob Holbrook, Michael Mason, Deborah Bouchard
CELLULOSE NANOMATERIALS: A NOVEL ADJUVANT AND DELIVERY
SYSTEM FOR AQUACULTURE VACCINE APPLICATIONS
- 2:45 George Selden**, Howard Brown, Luis Villagomez, Cindy Ledbetter,
Dave Straus, Philip Block, Pavel Korzinek, Jason Chef, Alex Chupalio,
John Paluszynski, Weidong An
EXPERIMENTAL PERACETIC ACID (PAA) USE IN A NORTH CAROLINA
TROUT RACEWAY

- 3:00 Jie (Jessie) Ma**, Veronica Myrsell, Joseph Dietrich, Ken Cain
DEVELOPMENT OF RIFAMPICIN AND NOVOBIOCIN RESISTANT *Aeromonas*
SALMONICIDA STRAINS AND THEIR POTENTIAL AS LIVE ATTENUATED
VACCINE CANDIDATES
- 3:15 Henriette Hanssen**, Lars Føsker, Kristian Nordøy, Helle Hagenlund, Henry
Thomassen
CAN FRESHWATER TREATMENT POTENTIALLY REDUCE ULCER
OUTBREAKS IN LAND-BASED SALMON AQUACULTURE?
- 3:30 Lars Føsker**, Oddrun Elise Olsen, Shruti Gupta, Mette Remen, Birger Venås
STRATEGIES FOR PREVENTING WINTER ULCERS OF THE SKIN IN
ATLANTIC SALMON *Salmo salar* L. IN NORWAY
- 3:45 Benjamin LaFrentz**, Amber E. Johnston, Carlos A. Lozano, Jose Fernando
Ospina-Arango, Craig A. Shoemaker, Sergio Vela-Avitúa, Morten Rye, Benjamin
H. Beck
CONTROLLED LABORATORY CHALLENGE DEMONSTRATES MODERATE
ADDITIVE GENETIC VARIATION IN RESISTANCE TO TILAPIA LAKE VIRUS IN
NILE TILAPIA
- 4:00 Nithin Muliya Sankappa**, Kushala Kallihosure Boregowda, Girisha Shivani
Kallappa, Linnea K. Andersen, Suresh Thangavel, Jason W. Abernathy
ISOLATION AND CHARACTERIZATION OF PHAGE AHFM11 AGAINST
HYPERVIRULENT *Aeromonas hydrophila* AND ITS USE IN AQUACULTURE AS
A THERAPEUTANT
- 4:15 Joel A. Bader**
THE UNITED STATES FISH AND WILDLIFE SERVICE FISH HEALTH CENTERS
AND THE ROLE THEY PLAY IN AQUATIC ANIMAL HEALTH IN SUPPORT OF
CONSERVATION AQUACULTURE

LIPIDS

Monday, February 19 11:00 AM - 12:30 PM Salon J

Chairs: Rebecca Lochmann, Michele Thompson

- 11:00 Alonso Carrillo Longoria**, Steven Rawles, Gibson Gaylord, Thomas Welker,
Matthew McEntire, Bradley Farmer, Madison Powell
EFFECT OF ORGANIC ACIDS AND ESSENTIAL OILS IN GROWTH AND GENE
EXPRESSION HYBRID STRIPED BASS
- 11:15 John Conto**
IMPACT OF DIETARY LIPID-TO-CARBOHYDRATE RATIOS ON GROWTH
PERFORMANCE, HEALTH, AND HEAT SHOCK TOLERANCE IN JUVENILE
YELLOW PERCH *Perca flavescens*

- 11:30 L. Héctor Hernández H.**, Alfredo Maldonado S., Mario A. Fernández A., Susana A. Frías G., Mauricio Castillo D.
DIETARY REQUIREMENTS OF CHOLESTEROL FOR JUVENILE CINNAMON RIVER PRAWN *Macrobrachium acanthurus*
- 11:45 Magida Tabbara**, Jill Moser, D. Allen Davis
EVALUATION OF THE USE OF PHYTOSTEROLS AS A PARTIAL SUBSTITUTE FOR CHOLESTEROL IN PACIFIC WHITELEG SHRIMP *Litopenaeus vannamei* DIETS
- 12:00 Ayofe Mutalib Hammed**, Mutmainnat Sanuth
COMPARATIVE FATTY ACID COMPOSITIONS IN *Clarias gariepinus*, *Chrysichthys nigrodigitatus*, *Heterobranchus bidorsalis* AND *Coptodon zillii*
- 12:15 Tao Han**, Qiang Chen, Congcong Wang, Yulong Sun, Songming Chen, Jiaqi Zhou, Jiteng Wang, Sheenan Harpaz
AN INTEGRATED ANALYSIS OF TRANSCRIPTOME AND METABOLOME REVEALS THREE BCAAS RELIEVE LIPID ACCUMULATION BY INHIBITING LIPID SYNTHESIS AND PROMOTING LIPID OXIDATION IN THE LIVER OF LARGEMOUTH BASS *Micropterus salmoides*

PHYSIOLOGY

Monday, February 19 11:00 AM - 12:30 PM Salon K

Chair: Todd Sink

- 11:00 Alex N. Gourlay**, Grace DiBlasio, Barbara Bailey, Michael F. Tlusty, Alice Wynn, Nancy E. Breen, Andrew L. Rhyne
CORRELATING FATTY ACID PROFILES WITH EGG QUALITY IN MARINE FINFISH FROM PUBLIC AQUARIUMS SPAWNS
- 11:15 Shymal Bhadra**, Israt Mishu, Lindee Mason, Ahmed Mustafa
NUTRACEUTICAL EFFECTS ON THE MODULATION OF PHYSIOLOGICAL AND IMMUNOLOGICAL RESPONSES IN TILAPIA
- 11:30 Kenneth Semmens**, Uchechukwu Ohajudu
ASSESSING THE EFFECT OF TEMPERATURE ON FEED CONSUMPTION, FEED EFFICIENCY, AND GROWTH RATE IN LARGEMOUTH BASS *Micropterus nigricans*
- 11:45 Gary P. Richards**, Jessica L. Jones, Henry N. Williams, Michael A. Watson
EFFECTIVENESS OF PREDATORY *Halobacteriovorax* BACTERIA TO ATTACK AND KILL HUMAN PATHOGENIC STRAINS OF *Vibrio parahaemolyticus*

**SALTY TALKS LIVE PODCAST!
SUSTAINABLE AQUACULTURE RESEARCH AT UMAINE'S ARI**

Monday, February 19 11:00 AM - 12:30 PM Room 21

Chairs: Corinne Noufi, Deborah Bouchard

MONDAY

- 11:00 Tom Sorby**
SOCIAL LICENSING – BUILDING COMMUNITY TRUST FOR LAND BASED
RAS

**FEDERAL SUPPORT FOR THE EXPANSION
OF U.S. AQUACULTURE**

Monday, February 19 11:00 AM - 4:30 PM Salon M

Chairs: Caird Rexroad, Gabriela McMurtry

- 11:00 Sebastian Belle**, National Aquaculture Association
OPENING REMARKS
- 11:15 Deerin Babb-Brott**, Jeffrey Silverstein, Michael Rubino, and David Miko,
Subcommittee on Aquaculture (SCA)
NATIONAL AQUACULTURE DEVELOPMENT PLAN (NADP)
- 11:30 Caird Rexroad**, USDA ARS
PROGRESS TOWARDS THE NATIONAL STRATEGIC PLAN FOR
AQUACULTURE RESEARCH
- 11:45 Kristine Cherry**, NOAA Progress
TOWARDS THE STRATEGIC PLAN TO ENHANCE REGULATORY EFFICIENCY
IN AQUACULTURE
- 12:00 David O'Brien**, NOAA and Christopher Davis, USDA ERS
UPDATE ON STRATEGIC PLANNING FOR AQUACULTURE ECONOMIC
DEVELOPMENT
- 12:15 SCA Co-chairs** and **Sebastian Belle**, NAA
OPEN MICROPHONE – AQUACULTURE ECONOMIC DEVELOPMENT AND
IMPLEMENTATION/ NADP
- 12:30 LUNCH**
- 1:30 Tim Sullivan**, USDA NIFA
REGIONAL AQUACULTURE CENTERS (RAC) REVIEW
- 2:00 Danielle Blacklock**, NOAA
NOAA ACTIVITIES IN ADVANCING SUSTAINABLE AQUACULTURE

- 2:30 Alecia Naugle** and Brianna Schur, USDA APHIS VS
APHIS VETERINARY SERVICES INITIATIVES TO SUPPORT AQUACULTURE EXPANSION
- 3:00 Taylor Lipscomb**, USFWS
CONSERVATION PROPAGATION'S ROLE IN SUPPORTING AQUACULTURE EXPANSION
- 3:30 SUBCOMMITTEE ON AQUACULTURE (SCA) UPDATES – AGENCY PANEL**
- 4:00 *Open microphone***

AQUATIC ANIMAL DRUG UPDATES

Monday, February 19 1:30 PM - 4:30 PM Salon B

Chair: Julie Shroeter

- 1:30 Stacey Pulver**; FDA/CVM
UPDATES FROM THE FOOD AND DRUG ADMINISTRATION'S CENTER FOR VETERINARY MEDICINE
- 1:45 Bonnie Johnson**; USFWS/AADAP
LOOKING BACK; 25 YEARS OF INAD HISTORY
- 2:00 Eric Landis**; FDA/CVM
FIRST STEPS: JUMPING INTO A SUCCESSFUL DRUG DEVELOPMENT PROJECT FOR FISH
- 2:15 Jennifer King**; FDA/CVM
ADUFA V PROCESS ENHANCEMENTS
- 2:30 Brittany Dalton**; Syndel
SYNDEL'S PROGRESS UPDATE
- 2:45 Shane Ramee**; USFWS/AADAP
UPDATES IN THE PURSUIT OF DRUG APPROVAL OF THE NOVEL SPAWNING AID CGNRH IIA
- 3:00 Pam Sponholtz**; USFWS/AADAP
GROWTH OF MARINE AQUACULTURE AND EMERGING DISEASE CHALLENGES
- 3:15 Jesse Trushenski**; Riverence
SEDATIVE OPTIONS FOR FIELD AND HATCHERY WORK WITH SALMONIDS

ZEBRAFISH HUSBANDRY WORKSHOP AND SUMMIT

Monday, February 19 1:30 PM - 4:30 PM Room 20

Chair: Bobbi Baur

MONDAY

Disease Session

- 2:00** Weaponizing eDNA Pathogen Surveillance for SPF Facilities
Corbin Schuster/Heritage U
- 2:20** Veterinary Care for Zebrafish: What's Changed Since 2008? Training and the IACUC
George Sanders/U Washington
- 2:40** Viral Infections in Zebrafish: Overview and Recent Developments
Marcus Crim/IDEXX
- 3:00** Controlling Pseudoloma in Zebrafish: Advancements and Challenges
Katy Murray/ZIRC
- 3:20** **BREAK**

ZHA Session

- 3:30** And Now For Something Completely Different: Sea Lamprey Husbandry
Hugh Hammer/U Pitt
- 3:40** Keeping A Head – A Novel Husbandry Method for Novel Research
Derek Walsh/Boston U
- 4:00** Zebrafish Colony Background PFAS Survey: Are Your Fish at Risk From Forever Chemicals?
Joan Hedge/US EPA

DIVERSITY AND INCLUSION IN AQUACULTURE

Monday, February 19 1:30 PM - 4:30 PM Room 21

Chairs: George Brooks, Eric Saillant, Angela Caporelli

This session is organized by members of the Diversity and Inclusion (DI) committee of the United States Aquaculture Society (USAS) and welcomes all World Aquaculture Society members and conference participants. The goal of the session is to provide a safe and inclusive environment where questions related to diversity, equity, and inclusion in the society, and aquaculture community at large, can be discussed freely. In this relaxed-fit forum, we welcome audience participation in a structured discussion of current issues, priority areas, and on-going diversity initiatives in the USAS.

The session will focus on the theme 'Lowering the barriers to entry for minorities in aquaculture' with a series of related presentations and a panel discussion.

- 1:30 Eric Saillant**, George Brooks, Angela Caporelli
INTRODUCTION AND UPDATES ON ACTIVITIES OF THE USAS DIVERSITY AND INCLUSION COMMITTEE
- 1:45 Brian Hanson** (USDA FSA San Antonio)
AN OVERVIEW OF PROGRAMS AVAILABLE TO FARMERS FROM USDA FSA
- 2:00 Joanne Rampersad-Ammons** (University of Texas Rio Grande Valley)
BARRIERS TO CULTIVATED OYSTER MARICULTURE FACED BY DISADVANTAGED COMMUNITIES SURROUNDING THE LOWER LAGUNA MADRE
- 2:15 Julie Kuchepatov** (Seafood And Gender Equality)
SEAFOOD AND GENDER EQUALITY (SAGE) - ADVANCING GENDER EQUALITY IN THE SEAFOOD SECTOR
- 2:30 Danielle Blacklock** (NOAA's Office of Aquaculture)
ENABLING CHANGE; NOAA EFFORTS TO IMPROVE DEI IN AQUACULTURE
- 2:45 Gulnihal Ozbay**, Dennis McIntosh (Delaware State University), Herbert Quintero Fonseca (Ohio State University)
AQUACULTURE EDUCATION IN MINORITY SERVING INSTITUTIONS WITH NO OFFICIAL AQUACULTURE CURRICULUM OR PROGRAM
- 3:00 Kevin Fitzsimmons** (University of Arizona)
NEW SCHOLARSHIP OPPORTUNITY: PREPARING HISPANIC AND OTHER UNDERREPRESENTED STUDENTS IN FISHERIES AND AQUACULTURE
- 3:15 George Brooks** (NxT Horizon)
TRANSFORMATIVE AQUAPONICS: GROWING AQUACULTURE IN URBAN AREAS
- 3:30 Mario Marquez** (Texas Sea Grant)
EXPANDING MARICULTURE IN TEXAS
- 3:45 Panel discussion**
Panel members
Imani Black (Minorities in Aquaculture), Brian Hanson (USDA FSA), Caird Rexroad (USDA), Danielle Blacklock (NOAA Office of Aquaculture), Lonnie Gonsalves (NOAA Stressor Detection and Impacts Division), Lori Greninger (Tribal Council Vice Chair), Mario Marquez (Texas Sea Grant)
- 4:30 Social**

OFFSHORE AQUACULTURE

Monday, February 19 1:30 PM - 4:30 PM Room 1

Chair: Tyler Sclodnick

MONDAY

- 1:30 Drue Banta Winters**
FEDERAL LEGISLATIVE UPDATE ON OFFSHORE AQUACULTURE
- 1:45 Tyler Sclodnick**, Jennie Korus, Spencer Lockhart
HOW TO ASSESS VALUE IN A SITE? WEIGHING UNRELATED PROS AND CONS IN SITE SELECTION
- 2:00 Per Arild Aland**
REDUCING RISK IN DESIGN AND OPERATION OF OCEAN AQUACULTURE
- 2:15 Per Arild Aland**
INDUSTRIALIZATION OF OCEAN FISH FARMING CONTRIBUTING TO BOOST SUPPLY OF MARINE PROTEINS – SOLUTIONS AND CHALLENGES
- 2:30 Michael Chambers**, David Fredriksson, Michael Coogan, Erich Berghahn, Mike Doherty, Martin Wozniak
A NEW OPPORTUNITY TO EVALUATE OPEN OCEAN AQUACULTURE SYSTEMS, WAVE ENERGY CONVERTER DEVICES, AND INSTRUMENTATION AT A PERMITTED SITE IN THE GULF OF MAINE
- 2:45 Daniel Benetti**
OFFSHORE AQUACULTURE IN THE AMERICAS: FROM R&D TO COMMERCIALIZATION
- 3:00 Carlos Carroza Meza**, Derie Fuentes, Felipe Hurtado, Felipe Palacio, Daniel Benetti
IS THE CURRENT CHILEAN LEGAL FRAMEWORK CONDUCIVE TO OFFSHORE AQUACULTURE EXPANSION?
- 3:15 Carlos Carroza Meza**, Derie Fuentes, Felipe Hurtado, Daniel Benetti
THE RACE FOR OFFSHORE AQUACULTURE DEVELOPMENT: THE EXPERIENCES OF NORWAY, CHILE, NEW ZEALAND, AUSTRALIA, AND THE UNITED STATES
- 3:30 Mikaela Freeman**, Lysel Garavelli, Molly Gear, Candace Briggs
SUSTAINABLE DEVELOPMENT THROUGH CO-LOCATION: OFFSHORE AQUACULTURE AND MARINE RENEWABLE ENERGY
- 3:45 Claire Gonzales**, Samantha Chen, Halley Froehlich
SYNTHESIS OF GLOBAL MARINE CO-LOCATION EFFORTS

- 4:00 Jennica Lowell Hawkins**, Neil Anthony Sims
ENVISIONING OUR AQUACULTURE FUTURE: A DESCRIPTION OF OCEAN ERA'S PROPOSED OFFSHORE FISH AND SEAWEED FARM (O'AHU, HAWAII)
- 4:15 Dennis Peters**, Neil A. Sims
THE VELELLA EPSILON PROJECT: PIONEERING OFFSHORE AQUACULTURE IN THE SOUTHEASTERN GULF OF MEXICO; CHAPTER 6 – FINALIZING PROJECT PERMITTING AND PREPARING FOR DEPLOYMENT: ACT III

ORNAMENTALS

Monday, February 19 1:30 PM - 4:30 PM Salon K
Chairs: Michelle Walsh, Matt DiMaggio

- 1:30 Andrew Rhyne**, Alex Gourlay, Lena Fitzgerald, Alice Wynn, Barbara Bailey, Michael Tlusty, Hap Fatzinger
ADVANCING AQUACULTURE THROUGH PUBLIC AQUARIUM COLLABORATION AND INNOVATION
- 1:45 Casey Murray**, Brittney Lacy, Olivia Markham, Matthew DiMaggio
REDUCING THE RELIANCE ON LIVE FEEDS DURING LARVICULTURE OF *Amphiprion ocellaris*
- 2:00 Travis Knorr**, Louis Ekus, Christine Shelton, Ed Wisner
COMMUNITY BUILDING: A SOCIAL APPROACH TO SUPPORTING SUCCESS IN THE ORNAMENTAL AQUARIUM TRADE THROUGH THE MARINE AQUARIUM SOCIETIES OF NORTH AMERICA
- 2:15 Andrew Rhyne**, Kylie Lev, Paul Anderson, Barbara Bailey
CRACKING THE CODE: DEVELOPING AN OPEN-SOURCE EGG IDENTIFICATION CATALOG FOR PUBLIC AQUARIUM AQUACULTURE
- 2:30 Olivia Markham**, Casey A. Murray, Brandon Ray, Maribeth Eslava, Sarah W. Hutchins, Matthew A. DiMaggio
EFFECTS OF ENVIRONMENTAL MANIPULATIONS ON THE SURVIVAL, GROWTH, AND FEEDING INCIDENCE OF LARVAL *Neocirrhites armatus*
- 2:45 Chatham K. Callan**
YELLOW TANG *Zebbrasoma flavescens* AQUACULTURE: GOING FROM LAB SCALE SUCCESS TO COMMERCIAL SCALE PRODUCTION IN HAWAII
- 3:00 Jessie Castanier**
SPAWNING AN AQUACULTURE OUTREACH PROGRAM AT THE TEXAS STATE AQUARIUM

- 3:15 Travis Knorr**, Casey Murray, Olivia Markham, Matthew DiMaggio
ENHANCEMENT OF COMMERCIALY AVAILABLE MICROPARTICULATE FEEDS USING THREE AMINO ACIDS: AN INVESTIGATION INTO FIRST FEEDING OF *Betta splendens*
- 3:30 Andrew Rhyne**, Michael Tlusty
BALANCING ACT: THE IMPACT OF TRADE POLICY ON AQUACULTURE, BIODIVERSITY, AND CONSERVATION
- 3:45 Uttam Deb**, FMS Abdal
IMPACT OF THE COVID-19 PANDEMIC AND INFLATION ON GLOBAL TRADE IN ORNAMENTAL FISH: IMPLICATIONS FOR THE UNITED STATES

SHRIMP HEALTH AND DISEASE

Monday, February 19 1:30 PM - 4:30 PM Salon A

Chair: Arun Dhar

- 1:30 Hung Mai**, Paul Schofield, Wendy Sealey, Arun Dhar
DEVELOPMENT OF A PCR-BASED DIAGNOSTIC ASSAY FOR WHITE SPOT SYNDROME VIRUS (WSSV) IN FORMULATED AQUAFEED
- 1:45 Maia Koliopoulos**, Sophie Howard, Rod Russel Alenton Reyes, Arun K. Dhar
DEVELOPMENT OF FLUORESCENCE *IN SITU* HYBRIDIZATION FOR DETECTION OF *Enterocytozoon hepatopenaei* IN FORMALIN-FIXED / PARAFFIN EMBEDDED *Penaeus vannamei* TISSUE
- 2:00 Carlos R. Pantoja**, Hung Nam Mai, Roberto Cruz-Flores, Sara Lynn, Maia Koliopoulos, Arun K. Dhar
HEPATOPANCREATIC MICROSPORIDIOSIS IN THE AMERICAS
- 2:15 Andrew Ray**, Leo Fleckenstein, Nathan Kring, Jill Fisk
SHORT TERM EFFECTS OF ELEVATED NITRITE AND NITRATE ON PACIFIC WHITE SHRIMP *Litopenaeus vannamei* SURVIVAL
- 2:30 Kuakarun Krusong**, Soraat Amphan, Pasunee Laohawutthichai, Thapanan Jatuyosporn, Premruethai Supungul, Anchalee Tassanakajon, David G. Fernig
EFFECTS OF DEXTRAN SULFATE AND HEPARIN ON SHRIMP IMMUNITY
- 2:45 Issabelle Ampofo**, Hung N. Mai, Arun K. Dhar, Daniel Grevers, Harris Wright, Breno O. Fragomeni
GENOMIC EVALUATION AND GENETIC PARAMETERS FOR ACUTE HEPATOPANCREATIC NECROSIS DISEASE (AHPND) RESISTANCE IN *Penaeus vannamei* (PACIFIC WHITE SHRIMP): INSIGHTS FROM CONTROLLED CHALLENGE EXPERIMENTS AND POPULATION GENOMICS

- 3:00 Paul Schofield**, Tanner Padilla, John Foscue, Arun Dhar
LESSONS LEARNED FROM EXPERIMENTAL BIOASSAYS INVOLVING *Enterocytozoon hepatopenaei*: IMPLICATIONS IN DEVELOPING FUNCTIONAL FEEDS AND EHP RESISTANT LINES OF SHRIMP
- 3:15 Gabriela Gaxiola**, Grecia Montalvo, Martin Arenas, Alvaro Barreto, Karla Escalante
EFFECT OF L-ASCORBYL-2-POLYPHOSPHATE (VITAMIN C) ON IMMUNE AND ANTIOXIDANT RESPONSE OF *Litopenaeus vannamei* (BOONE, 1931) BROODSTOCK MALES
- 3:30 Roberto Cruz-Flores**, Arun K. Dhar
TRACKING DOWN AND CHARACTERIZING DIVERGENT STRAINS OF VIRAL SHRIMP PATHOGENS THROUGH MOLECULAR HISTOLOGY: THE CASE OF A NEW GENOTYPE OF DECAPOD HEPANHAMAPARVOVIRUS
- 3:45 Susan Knudson**, Luke Keeton, Chaitanya Noti
"WHAT'S IN THE WATER?" THE STUDY OF SHRIMP POND MICROBIOMES AND THEIR RELATIONSHIP TO DISEASE OUTBREAKS

ECHINODERMS

Monday, February 19 1:30 PM - 4:30 PM Salon D

Chairs: Luke Gardner, Abigail Bockus

- 1:30 Luz M. Kogson**, Steve Eddy
GREEN SEA URCHIN *Strongylocentrotus droebachiensis* FROM THE HATCHERY TO THE NEW ENGLAND FARMERS: A UNIVERSITY OF MAINE – CENTER FOR COOPERATIVE AQUACULTURE OVERVIEW
- 1:45 Luke Gardner**, Ava Salmi, Charles Colgan, Michael Graham, Carolyn Culver
BUSINESS ECONOMIC ANALYSIS FOR WEST COAST BASED URCHIN RANCHING
- 2:00 Ford Evans**, Chris Langdon, Tom Calvanese, Jeff Griffin, Paola Buentello, Lindsey Badder, Tate Scarpaci, Alisha Andrews
ASSESSING THE FEASIBILITY OF LAND-BASED CO-CULTURE OF PURPLE SEA URCHINS *Strongylocentrotus purpuratus* AND PACIFIC DULSE *Devaleraea mollis* IN OREGON
- 2:15 Gabriel Tsuruta**, Samuel Briggs, Joseph Newman, Francis Hurd, Karl Menard
CREATION OF A COMPREHENSIVE OPEN-SOURCE MANUAL FOR THE RESTORATIVE AQUACULTURE OF THE PURPLE URCHIN *Strongylocentrotus purpuratus*

- 2:30 Abigail Bockus**, Gabriel H. Tsuruta, Karl Menard, Sam Briggs, Joe Newman, Frank Hurd, T. Gibson Gaylord
DIET DEVELOPMENT FOR PURPLE URCHIN *Strongylocentrotus purpuratus* CULTURE ON THE WEST COAST
- 2:45 Luke Gardner**, Kierstin Thigpen, Scott Hamilton
THE DEVELOPMENT OF UNI IN PURPLE SEA URCHINS FED A DIET OF VEGETABLES
- 3:00 Coleen Suckling**, Tara Plee, Dana Morse, Steve Eddy
EXPANDING NORTHEASTERN U.S. GREEN SEA URCHIN AQUACULTURE PRODUCTION AND THEIR POTENTIAL TO REDUCE BIOFOULING OF SHELLFISH
- 3:15 Matthew Elliott**, Yuanzi Huo, Mark Drawbridge
GONADAL PRODUCTION AND QUALITY ENHANCEMENT IN THE RED SEA URCHIN *Mesocentrotus franciscanus* FED WITH DULSE *Devaleraea mollis* AND SEA LETTUCE *Ulva lactuca* HARVESTED FROM A LAND-BASED INTEGRATED MULTI-TROPHIC AQUACULTURE (IMTA) SYSTEM
- 3:30 Yuanzi Huo**, Kevin Stuart, Mark Drawbridge
EARLY LIFE CYCLE AND EFFECTS OF MICROALGAL DIETS ON LARVAL DEVELOPMENT OF WARTY SEA CUCUMBER *Apostichopus parvimensis*
- 3:45 Joshua Patterson**, Maggie Dakin, Alex Petrosino, Jessica Smith, Aaron Pilnick
HYDRODYNAMIC-MODULATED LARVAL DEVELOPMENT AND POTENTIAL FOR JUVENILE CO-CULTURE WITH CORALS IN THREE SYMPATRIC SEA URCHIN SPECIES

CATFISH - CATFISH HYBRIDS

Monday, February 19 1:30 PM - 4:30 PM Room 16

Chairs: Jimmy Avery, Anita Kelly

- 1:30 Jimmy L. Avery**
STATUS OF THE U.S. FARM-RAISED CATFISH INDUSTRY – 2023
- 1:45 Lianqun Sun**, Ganesh Kumar
FACTORS INFLUENCING U.S. CATFISH SUPPLIES
- 2:00 Ganesh Kumar**, Morgan Cheatham
COST AND IMPACT OF OFF-FLAVOR ON U.S. CATFISH FARMS

- 2:15 Bradley Richardson**, Noor ul-Huda, Cynthia Ware, Alvin Camus, Caitlin Older, Fernando Yamamoto, Penelope Goodman, Grant Reifers, Charles Walker, Justin Stilwell, David Marancik, David Wise, Matt Griffin
IT'S NOT THE SIZE THAT MATTERS: STOCKING LARGER CHANNEL CATFISH *Ictalurus punctatus* FINGERLINGS DOES NOT PROTECT AGAINST PROLIFERATIVE GILL DISEASE
- 2:30 Fabiola Mustafaj**
RESPONSIBLE CATFISH IS NEXT ON THE U.S. MENU! THE SCOPE EXTENSION PROJECT OF THE AQUACULTURE STEWARDSHIP COUNCIL
- 2:45 Julia L. Palmer**, Jesse P.B. James, Peter C. Sakaris, Anita M. Kelly, Hisham A. Abdelrahman, Benjamin H. Beck, Luke A. Roy
USING FISHERIES TECHNIQUES TO ESTIMATE THE AGE AND GROWTH OF HYBRID CATFISH *Ictalurus punctatus* FEMALE × *I. furcatus* MALE IN WEST ALABAMA COMMERCIAL PONDS
- 3:00 Darshika Hettiarachchi**, Logan Bern, Jacob Al-Armanazi, Kate Pottle, Barrett Chambers, Sean Parham, Baofeng Su, Mei Shang, Jinhai Wang, Ian A.E. Butts, Rex A. Dunham
PRODUCTION OF XENOGENIC CATFISH BY TRANSPLANTING BLUE CATFISH *Ictalurus furcatus* AND CHANNEL CATFISH *Ictalurus punctatus* STEM CELLS INTO WHITE CATFISH *Ameiurus catus* TRIPLOID FRY
- 3:15 Israt Mishu**, Abdullahi Idowu, Lindee Mason, Conrad Anderson, Timothy Bruce, Ahmed Mustafa
MORTALITY OF STRESS-REARED CHANNEL CATFISH *Ictalurus punctatus* FED TRYPTOPHAN AND CHALLENGED WITH VIRULENT *Aeromonas hydrophila*
- 3:30 David Brune**, Caye Drapcho
PHOTOSYNTHESIS IN ENHANCED CATFISH PRODUCTION SYSTEMS
- 3:45 Geronimo Leonardi**, Fabrizio Caruso, Ester Grilli, Andrea Piva
MICROENCAPSULATED BLEND OF CITRIC ACID, SORBIC ACID, THYMOL, AND VANILLIN STIMULATES IN-FIELD PERFORMANCES OF CHANNEL CATFISH *Ictalurus punctatus*
- 4:00 Hisham Abdelrahman**, Anita Kelly, Luke Roy, Jesse James, Shelby Marsh, Henry Hershey, Joseph Tomasso
PHYSIOLOGICAL STRESS RESPONSES OF HYBRID CATFISH *Ictalurus punctatus* ♀ × *I. furcatus* ♂ DURING HARVEST, TRANSPORT, AND PROCESSING

- 4:15 Brian Bosworth**, Dakoda Chisolm, Michael Patterson, Brian Ott
RELATIONSHIPS BETWEEN WEIGHT LOSS DURING SHORT-TERM FEED DEPRIVATION, FEED CONVERSION EFFICIENCY AND GROWTH IN DELTA SELECT AND DELTA CONTROL LINE CHANNEL CATFISH FAMILIES

FEED INGREDIENTS

Monday, February 19 1:30 PM - 4:30 PM Salon J

Chairs: Wendy Sealey, Krishna Singha

- 1:30 Zackary Johnson**
THE MARINE ALGAE INDUSTRIALIZATION CONSORTIUM (MAGIC): DEVELOPMENT OF MARINE MICROALGAE FOR THE SUSTAINABLE PRODUCTION OF FOOD, FEED, AND FUEL
- 1:45 Jeremiah Minich**, Todd Michael
METAANALYSIS OF USING DUCKWEED *Lemnaceae* IN FISH FEEDS
- 2:00 Aakriti Khanal**, Kasondra Miller, Waldemar Rossi
CANNABIS FOR SHRIMP: DIGESTIBILITY OF HEMPSEED MEALS BY *Litopenaeus vannamei*
- 2:15 Aakriti Khanal**, Kasondra Miller, Waldemar Rossi
CANNABIS FOR SHRIMP: RESPONSES OF PACIFIC WHITE SHRIMP *Litopenaeus vannamei* TO DIETARY HEMPSEED MEALS
- 2:30 Trinh Ngo**, Tucker Graff, Sajid Alavi, D. Allen Davis
EVALUATION OF DIETS CONTAINING SORGHUM AT DIFFERENT LEVELS OF THERMAL ENERGY ON GROWTH PERFORMANCE OF THE PACIFIC WHITE SHRIMP *Litopenaeus vannamei*
- 2:45 Magnus Krever**, Anthony Siccardi
UTILIZATION OF ALGAL TURF SCRUBBER BIOMASS IN SEA URCHIN *Lytechinus variegatus* DIET
- 3:00 Abigail Bockus**, Madison Powell, Jacob Bledsoe, T. Gibson Gaylord
DECREASING DIET PH WITH HYDROCHLORIC ACID REDUCES GROWTH PERFORMANCE IN RAINBOW TROUT *Oncorhynchus mykiss*
- 3:15 Gibson Gaylord**, Thomas Welker, Madison Powell, Steven D. Rawles, Abigail Bockus
UTILIZATION OF FEED ENZYMES FOR RAINBOW TROUT *Oncorhynchus mykiss* FEEDS

- 3:30 Shafaq Fatima**, Razia Liaqat, Wajeeha Komal, Qandeel Minahal
EFFECTS OF BACILLUS SUBTILIS AS A SINGLE STRAIN PROBIOTIC ON GROWTH, DISEASE RESISTANCE AND IMMUNE RESPONSE OF STRIPED CATFISH *Pangasius hypophthalmus*
- 3:45 Magida Tabbara**, Adela Araujo, Sidra Nazeer, Silvio Peixoto, Richard Smullen, Matthew Briggs, D. Allen Davis
EFFICACY OF A BACTERIAL BIOMASS AS A BIOACTIVE COMPONENT OF PACIFIC WHITE SHRIMP *Litopenaeus vannamei* FEEDS
- 4:00 Ian Forster**, Wendy Vandersteen, Barb Cannon
USE OF INSECT MEAL AND ALGAL OIL IN DIETS FOR CHINOOK SALMON *Oncorhynchus tshawytscha*

FINFISH AND CRUSTACEAN GENETICS-SELECTION-GENOMICS

Monday, February 19 1:30 PM - 4:30 PM Salon C

Chair: Matt Powell

- 1:30 Caitlin Older**, Charles C. Mischke, Bradley M. Richardson, Monica Wood, Cynthia Ware, Manoj Chandy Koshy, John W. Lowe, Geoffrey C. Waldbieser, Matt J. Griffin, David J. Wise
MULTIPLE, LOW-DOSE COPPER TREATMENTS STABILIZE BACTERIAL COMMUNITIES IN CHANNEL CATFISH PONDS
- 1:45 Kate Pottle**, Darshika Hettiarachchi, Jake Al-Armanazi, Barrett Chambers, Sean Parham, Misha Soman, Hamza Dilawar, Baofeng Su, Mei Shang, Ian Butts, Rex Dunham
OPTIMIZING COLONIZATION AND PROLIFERATION OF BLUE CATFISH *Ictalurus furcatus* DONOR STEM CELLS FOR THE CREATION OF XENOGENIC CATFISH; DETERMINING THE OPTIMAL DONOR STEM CELL QUANTITY
- 2:00 Hauwau Abubakar Salele**, Akeem Babatunde Dauda, Armaya'u Hamisu Bichi, Olukayode Amos Sogbesan
MORPHOMETRIC AND MERISTIC VARIATION OF CICHLIDS IN ZOBE RESERVOIR, KATSINA STATE, NIGERIA
- 2:15 Mosope Abanikannda**, Jacob Bledsoe
ASSESSING MUCOSAL MICROBIOME ADAPTATION TO TEMPERATURE CHANGES IN REDBAND TROUT *Oncorhynchus mykiss gairdeneri* POPULATIONS

- 2:30 Jeremiah Minich**, Malia L. Moore, Nicholas A. Allsing, Emily R. Murray, Loi Tran, Todd P. Michael
SEQUENCING ALL THE FISHES IN THE DEEP BLUE SEA: IMPACTS OF SAMPLE STORAGE TIME, TEMPERATURE, AND BUFFER TYPE ON DNA QUALITY VALIDATED THROUGH LONG READ SEQUENCING AND ASSEMBLY
- 2:45 John Buchanan**, Takeshi Umazume, Xavier Lauth
STERILITY IS A FOUNDATIONAL TRAIT FOR THE COMMERCIALIZATION OF GENOME EDITING AND GENETIC BIOTECHNOLOGIES
- 3:00 Jason Abernathy**, Nithin Muliya Sankappa, Miles Lange, Mediha Yildirim-Aksoy, Rashida Eljack, Huseyin Kucuktas, Benjamin Beck
INCLUSION OF FRASS FROM BLACK SOLDIER FLY *Hermetia illucens* LARVAE IN AQUAFEEDS MODULATES IMMUNE GENE EXPRESSION IN CHANNEL CATFISH *Ictalurus punctatus*
- 3:15 Fabio Casu**, Tracey Schock, Amanda Bayless, Ashley Boggs
DEVELOPMENT OF OVARIAN FLUID METABOLOMIC ANALYSIS FOR REPRODUCTIVE BIOMARKER DISCOVERY IN ATLANTIC SALMON
- 3:30 John Buchanan**, Adriana Artilles, Carlos Pulgarin, Marcos de Donato, Jeff Prochaska, Klara Verbyla, Simon Hill
HARNESSING EFFICIENT GENETIC IMPROVEMENT TO MAXIMIZE ECONOMIC RETURN
- 3:45 Thomas Delomas**, Christopher Hollenbeck, Joseph Matt, Neil Thompson
LOWERING THE COST OF GENOMIC SELECTION BY GENOTYPING MICROHAPLOTYPES
- 4:00 Olalekan R. Oguntade**
MOLECULAR PROFILING, GROWTH PERFORMANCE AND SELECTION TRAITS FOR DIFFERENT STRAINS OF *Clarias gariepinus* (BURCHELL) IN MAJOR NIGERIAN FRESH WATER BODIES

TUESDAY, February 20

ECONOMICS AND MARKETS

Tuesday, February 20 8:30 AM - 5:00 PM Salon K

Chairs: Frank Asche, Ganesh Kumar, Atle Oglend

- 8:30 Dengjun Zhang**, Geir Sogn-Grundvag, Liyuan He, Ragnar Tvetervas, Xiaofeng Xu
BIOPHYSICAL FACTORS, ENVIRONMENTAL REGULATIONS, AND SUSTAINABLE EARNINGS: THE CASE OF SALMON FARMING COMPANIES
- 8:45 Seong Yun**, Yunsun Park, Tyler Mark, Brandon McFadden, Brandy Phipps, Craig Schluttenhofer, Waldemar Rossi
INTRODUCING OR PROMOTING FEED CROPS FOR AQUACULTURE CAN LEAD TO CHANGES IN CROP ACREAGE PORTFOLIO: A CASE STUDY OF HEMP AND CROP MIX CHANGES IN KENTUCKY
- 9:00 Daniel Petrolia**
CHALLENGES, OPPORTUNITIES, AND PROFITABILITY OF SMALL AND MEDIUM OFF-BOTTOM OYSTER FARMS: ANALYSIS AND A SPREADSHEET-BASED TOOL
- 9:15 Ganesh Kumar**, Carole Engle, Suja Aarattuthodi, Shraddha Hegde, Jonathan van Senten, Lester Khoo, Larry Hanson, Larry Dorman, Mark Peterman
ESTIMATING THE TRUE ECONOMIC IMPACT OF DISEASES: THE CASE OF EDWARDSIELLOSIS
- 9:30 Taryn Garlock**, Frank Asche, Erica Ross, Casey Butler, Thomas Matthews
BIOECONOMICS OF ON-GROWING SPINY LOBSTERS IN FLORIDA
- 9:45 Lijun Liu**, James Anderson, Frank Asche
RISK ASSESSMENT FOR SUPER-INTENSIVE RECIRCULATING SHRIMP AQUACULTURE SYSTEMS
- 10:00 BREAK**
- 10:30 Frank Asche**, Taryn Garlock, James L. Anderson
UNDERSTANDING FACTORS INFLUENCING THE ENVIRONMENTAL, ECONOMIC AND SOCIAL SUSTAINABILITY OF AQUACULTURE SYSTEMS
- 10:45 Kamila Kulmambetova**, Ruth Beatriz Pincinato
SPILLOVER EFFECTS OF NEIGHBORING SALMON FARMS TREATMENTS: THE ROLE OF SPATIAL PRODUCTION SITE DISTRIBUTION ON SEA LICE INFESTATION. KARMØY ZONE CASE

- 11:00 Md Akhtaruzzaman Khan**, Nayeema Akter, Sajjad Hossain, Max Nielsen, Rasmus Nielsen
RESILIENCE CAPACITY AND SUSTAINABILITY OF PRAWN FARMING IN BANGLADESH
- 11:15 Charles Clark**, Fernando Goncalves, Jonathan van Senten, Katheryn Parraga-Estrada, Michael Schwarz
ECONOMIC IMPACT OF SHELLFISH CLOSURES IN VIRGINIA
- 11:30 Fernando Goncalves**, Jonathan van Senten, Michael Schwarz
ECONOMIC BENEFITS OF LOCAL SEAFOOD IN RESTAURANTS AND RETAIL STORES IN VIRGINIA
- 11:45 Jordan Moor**, Lijun Liu, Andrew Ropicki
THE IMPACT OF FINANCING ON FARM SUCCESS: A RISK ANALYSIS FOR AQUACULTURE
- 12:00 Taylor L. Bradford**, Kwamena Quagraine, Jingjing (Tina) Tao
ONLINE MEDIA SENTIMENT ANALYSIS FOR U.S. OYSTERS
- 12:30 LUNCH**
- 1:30 Atle Oglend**, Frank Asche, Hans Martin Straume
NORWEGIAN SEAFOOD TRADE: THE ROLE OF TRADERS
- 1:45 Jillian Hyink**, Brandon McFadden, Brandy Phipps, Tyler Mark, Craig Schluttenhofer, Seong-Do Yun
CONSUMER PREFERENCES FOR HEMP-FED AQUACULTURE
- 2:00 Hans-Martin Straume**, Atle Oglend, Nita Santika
INTERMEDIARIES IN NORWEGIAN SALMON EXPORT
- 2:15 Kamal Gosh**, Yonathan Tilahun, Malcolm McCallum
EXPLORING THE INFLUENTIAL FACTORS SHAPING CONSUMER BEHAVIOR AND PURCHASE INTENTIONS OF ORGANIC SEAFOOD PRODUCTS
- 2:30 Lianqun Sun**, Ganesh Kumar
EXPLORING ELASTICITY PATTERNS AMONG MAJOR FINFISH PRODUCTS IN THE U.S. RETAIL MARKET
- 2:45 Jingjing (Tina) Tao**, Kwamena K. Quagraine
SENTIMENT ANALYSIS OF SHRIMP AND SALMON USING ONLINE CHATTER
- 3:00 Julia Bronnmann**, Ingrid Kristine Pettersen
SATISFYING NORWEGIAN APPETITES: DECODING REGIONAL SHRIMP DEMAND

- 3:15 Mustafa Selcuk Uzmanoglu**, Shraddha Hegde, Carole Engle, Jonathan van Senten, Ganesh Kumar, Madan Dey
ATTRIBUTES AND ADVERTISING PREFERENCES AFFECTING AT-HOME SEAFOOD CONSUMPTION DURING THE PANDEMIC AND THROUGHOUT THE RECOVERY
- 3:30 Lianqun Sun**, Ganesh Kumar
CHARACTERISTICS OF U.S. SEAFOOD CONSUMERS: PERSPECTIVES BASED ON HOME SCANNER DATA
- 3:45 Mohammad Sadur Rahman**, Madan M. Dey, Md. Akhtaruzzaman Khan, Md. Farid Dewan, K.H.M. Nazmul Hussain Nazir, P.O. Sudhakaran
FROM POND TO PLATE: ASSESSING FISH PRODUCERS' KNOW-HOW AND CONSUMERS' WILLINGNESS TO PAY FOR SAFER FISH IN BANGLADESH
- 4:00 Madan Dey**, Abhipsita Das, Md Takibur Rahman, Prokash Deb, Md Emran Hossain, Md. Akhtaruzzaman Khan
ESTIMATION OF FOOD DEMAND AND NUTRIENT ELASTICITIES: A DISAGGREGATED ANALYSIS OF THE BANGLADESH HOUSEHOLD INCOME AND EXPENDITURE SURVEY DATA OF 2000, 2005, 2010, AND 2016
- 4:15 Hurunnahar Khushi**, Pratheesh Omana Sudhakaran, Md. Saidur Rahman, Md. Akhtaruzzaman Khan, Madan Mohan Dey
CONSUMERS' WILLINGNESS TO PAY FOR SAFER FISH IN BANGLADESH
- 4:30 Shraddha Hegde**, Thuy Nguyen, Carole Engle, Jonathan van Senten, Ganesh Kumar, Madan Dey
SEAFOOD CONSUMER PREFERENCES PRE- AND POST- COVID-19 PANDEMIC: ANALYSIS OF DELIVERY, PACKAGING, AND ADVERTISING DYNAMICS IN THE U.S. SEAFOOD INDUSTRY

SUSTAINABLE AQUACULTURE CONTRIBUTED SESSION

Tuesday, February 20 8:30 AM - 10:00 AM Salon D

Chair: Omolola Betiku

- 8:30 Mark Lawrence**, Stephen Reichley, Gina Rico Mendez, Masey Smith, Kelly Stewart, Laura Zselezcky
FEED THE FUTURE INNOVATION LAB FOR FISH: SETTING THE TABLE FOR GLOBAL IMPACT
- 8:45 Jack Koch**, Terrence Tiersch
AN ARCHIPELAGO, NOT JUST ISLANDS: DEVELOPING REPOSITORY SYSTEMS FOR SAFEGUARDING THE GENETIC RESOURCES OF AQUATIC INVERTEBRATES

9:00 **Mohammad Gulam Hussain**, Madan Mohan Dey
IMPLEMENTATION OF FIL FUNDED PROJECTS IN ASIA REGION: ROLE
AND IMPACTS ON AQUACULTURE AND FISHERIES DEVELOPMENT IN
BANGLADESH AND CAMBODIA

9:15 **Josh Graybiel**
SEAFOOD WATCH AQUACULTURE STANDARD AND RATINGS

LARVAL CULTURE

Tuesday, February 20 8:30 AM - 11:30 AM Room 3

Chair: Aaron Watson

8:30 **Adebusola J. Ishola**, Christian A. King, Abby L. Wilbers, Jacob B. Loesch,
Dallas L. Flickinger
PRELIMINARY RESULTS FOR THE LARVICULTURE OF THE OHIO RIVER
PRAWN *Macrobrachium ohione*

8:45 **Sydney Avena**, Christopher Davis, Anne Langston Noll, Meredith White,
Cody Jouret, Brian Beal, Brea Salter, Tessa Houston, Sarah Zuidema,
Kyle Pepperman, Damian Brady, Timothy Bowden, Jennifer Perry, Sue Ishaq,
Erin Grey, Kyle Brennan, Nichole Blackmer, Mark Dixon, Gary Wikfors
"CRACKING THE SHELL": LESSONS LEARNED FROM A COLLABORATIVE
APPROACH TO DEVELOPING HATCHERY PRODUCTION OF THE ATLANTIC
SEA SCALLOP *Placopecten magellanicus*

9:00 **Lauren George**, Aubrey Dissinger, Karolina Kwasek
IT'S GETTING HOT IN HERE: AN INVESTIGATION INTO THE
ENVIRONMENTAL PLASTICITY OF LARVAL ZEBRAFISH *Danio rerio*

9:15 **Daniel Margulies**, Yole Buchalla, Susana Cusatti, Vernon Scholey,
Aki Miyashima, Yasuo Agawa, Tomoki Honryo, Yoshifumi Sawada
THE EFFECTS OF FOOD LEVEL AND STOCKING DENSITY ON GROWTH
AND SURVIVAL OF YELLOWFIN TUNA *Thunnus albacares* AND PACIFIC
BLUEFIN TUNA *Thunnus orientalis* LARVAE

9:30 **Kieran Smith**, Chad Hebert, Donald Schreiner, Amy Schrank
EMBRYO INCUBATION, HATCHING, AND LARVAL REARING STRATEGIES
FOR PRODUCTION OF YELLOW PERCH *Perca flavescens* FEED TRAINED
FINGERLINGS FOR STOCKING IN RECIRCULATING AQUACULTURE
SYSTEMS (RAS)

9:45 **Kerry Mesner**, Jason T. Lemus, Kaitlyn S. O'Neil
EFFECTS OF WEANING AGE ON LARVAL RED DRUM *Sciaenops ocellatus*
GROWTH AND SURVIVAL IN RECIRCULATING TANKS

TUESDAY

- 10:00 Kara Chuang**, Kevin Stuart, Mark Drawbridge, Chris Langdon, Matt Hawkyard
LIPOSOME-CONTAINING COMPLEX PARTICLES AS A NOVEL METHOD FOR DELIVERY OF ESSENTIAL NUTRIENTS TO MARINE FINFISH LARVAE

FEED SUPPLEMENTS AND GUT HEALTH

Tuesday, February 20 8:30 AM - 11:30 AM Salon J

Chairs: Fernando Yamamoto, Blaine Suehs

- 8:30 John Idenyi**, Hadimundeen Abdallah, Abigeal Adeyemi, Jonathan Eya
IMPACTS OF BLENDING VARIOUS PROTEIN AND OIL SOURCES ON THE GUT MICROBIOTA OF RAINBOW TROUT *Oncorhynchus mykiss* RAISED AT VARIED TEMPERATURE REGIMENS
- 8:45 Ana Beatriz Farias**, Thiago M. Santana, Jing Huang, Penelope M. Goodman, J. Grant Reifers, Heather Jordan, Nicholas Romano, Delbert M. Gatlin III, Ligia Uribe Gonçalves, Fernando Y. Yamamoto
BLACK SOLDIER FLY LARVAE *Hermetia illucens* OIL AS A POTENTIAL NUTRACEUTICAL INGREDIENT IN DIETS FOR HYBRID CATFISH *Ictalurus punctatus* × *I. furcatus*
- 9:00 Thiago Santana**, Ana Beatriz Farias, Vitor Silva, Crystal Conde, Jonathan Reifers, Penelope Goodman, Heather Jordan, Nicholas Romano, Dalbert Gatlin, Ligia Gonçalves, Fernando Yamamoto
BLACK SOLDIER FLY LARVAE *Hermetia illucens* EXOSKELETON AS A POTENTIAL SOURCE OF CHITIN IN DIETS FOR CHANNEL CATFISH *Ictalurus punctatus*
- 9:15 Jing Huang**, Heather Jordan, Caitlin Older, Vitor Silva, Matt Griffin, Peter Allen, David Wise, Grant Reifers, Penelope Goodman, Fernando Yamamoto
INVESTIGATING THE SUPPLEMENTATION OF *Lactococcus lactis* MA5 AS AN AUTOCHTHONOUS PROBIOTIC ON DIETS FOR HYBRID CATFISH *Ictalurus punctatus* × *I. furcatus*: EFFECTS ON GROWTH PERFORMANCE, IMMUNE MODULATION, AND DISEASE RESISTANCE
- 9:30 Sheu Odu-Onikosi**, Noah Wood, Folasade Amulejoye, Ben Eynon, Matthew Emery, Holger Kühlwein, Daniel Merrifield
EVALUATION OF THE MUCOSAL HEALTH OF ATLANTIC SALMON *Salmo salar* FED TWO DIETARY YEAST ADDITIVES
- 9:45 Taofik Adeiza Momoh**, Folasade Damilola Amulejoye, Benjamin Eynon, Holger Kuhlwein, Victor Kuri, Daniel L. Merrifield
PURIFIED BREWERS' YEAST-DERIVED FUNCTIONAL FEED ADDITIVES ALLEVIATE SOYBEAN MEAL-INDUCED ENTERITIS IN ATLANTIC SALMON PARR
- 10:00 BREAK**

- 10:30 Luisa Villamil**, Mario Colorado, Javier Melo-Bolívar, Ruth Ruiz, Jorge Rodriguez
EXPLORATION OF *Cetobacterium* sp. AS A POTENTIAL PROBIOTIC FOR NILE
TILAPIA *Oreochromis niloticus* CULTURE
- 10:45 Vitor Fernandes Silva**, Edgar Rodrigues, Pedro Carvalho, José Luiz P. Mouriño,
Fernando Yamamoto, Delbert Gatlin
MINERAL NANOPARTICLES SUPPLEMENTATION IN THE DIETS OF
CHANNEL CATFISH *Ictalurus punctatus*
- 11:00 Blaine Suehs**, Guoyao Wu, Erin D. Connolly, Delbert M. Gatlin III
THE EFFECTS OF GLYCINE SUPPLEMENTATION IN SOYBEAN MEAL-BASED
DIETS AS A FUNCTIONAL AMINO ACID FOR JUVINILE HYBRID STRIPED
BASS *Morone chrysops* × *M. saxatilis*
- 11:15 Noor Khan**, Ayesha Tanveer
EFFECT OF MULTI-STRAIN PROBIOTICS ON THE GROWTH, BLOOD
BIOCHEMISTRY, AND ENZYME ACTIVITIES OF *Clarias batrachus*

**GETTING IT RIGHT:
CONSERVATION AQUACULTURE FOR RECOVERY,
RESTORATION AND SUPPLEMENTATION**

Tuesday, February 20 8:30 AM - 12:30 PM Room 16
Chairs: Joshua Patterson, Ann Gannam, Taylor Lipscomb

- 8:30 Taylor Lipscomb**, Jennifer Gumm, David Hewitt, Nathan Wilke
PROPAGATION FOR RECOVERY AND RESTORATION: A REVIEW OF
TWENTY PRIORITY PROGRAMS
- 8:45 Laura Solinger**, Alessandra Huamani, Alicia Miller, Burton Shank, Michael Asaro
COMMERCIAL FISHERIES AND ENDANGERED SPECIES: A TOOL FOR
AQUACULTURE PLANNING TO MINIMIZE TWO UNWANTED INTERACTIONS
- 9:00 Alexander Gregory**, Daniel Sherman, Mike Preul, John Conto, Dong-Fang Deng,
Patrick Blaufuss
ENHANCING THE AQUACULTURE POTENTIAL AND STOCKING OF WALLEYE
Sander vitreus THROUGH MANAGEMENT OF FEED NUTRITION
- 9:15 Dong-Fang Deng**, Haiyan Liu, Mao Lin, Huihong Zhao, Ryan Newton,
Brian Shepherd, Fred Binkowski
CAN FORMULATED FEED REPLACE FROZEN BLOODWORMS FOR
FEEDING LAKE STURGEON *Acipenser fulvescens*?
- 9:30 Tien-Chieh Hung**
FROM REFUGE TO RELEASE: UPGRADING METHODS AND FACILITIES FOR
ADVANCED FISH PROPAGATION OF DELTA SMELT

- 9:45 Shawn P. Young**
RECENT ADAPTATIONS OF THE KOOTENAI RIVER NATIVE FISH CONSERVATION AQUACULTURE PROGRAM TO RESTORE WHITE STURGEON AND BURBOT
- 10:00 BREAK**
- 10:30 Taylor Saucier**, Scott Bonar, Kevin Fitzsimmons, Matthew Recsetar
PERSEVERANCE IN CAPTIVE REARING OF THE SONORA SUCKER
Catostomus insignis: MANAGING FOR SURVIVAL FIRST
- 10:45 Megan Davis**, Amanda Matthews, Becky Holt, Robinson Bazurto, Benjamin Metzger, David Bourdette, Jeffery Smith, Catherine Booker, Rupert Hayward, Melissa Halpern, Antony Johns, Raimundo Espinoza
QUEEN CONCH MOBILE MARICULTURE LABS FOR FLORIDA AND THE CARIBBEAN
- 11:00 Aaron Pilnick**, Joshua Patterson
UPDATE: THE ROLE OF SEA URCHIN AQUACULTURE IN A MISSION TO RESTORE SEVEN ICONIC REEFS IN THE FLORIDA KEYS
- 11:15 Ann Gannam**, Ron Twibell, Michelle Jackson, Jacob Harrison
EVALUATION OF NON-LETHAL CONDITION ASSESSMENT TOOLS FOR THE CAPTIVE AND WILD FRESHWATER WESTERN PEARLSHELL MUSSEL
Margaritifera falcata
- 11:30 Connor Schwepe**
ONGOING DEVELOPMENT OF CRYOPRESERVATION TOOLS AND PROTOCOLS TO IMPROVE UTAH FISHERIES
- 11:45 Aaron Watson**, Tanya Darden, Michael Denson, Joseph Ballenger, Justin Yost, Matt Walker, Jackie Allen, Karl Brenkert, Matt Perkinson, Tim O'Donnell
A DECADE OF THE SCDNR SPOTTED SEATROUT STOCK ENHANCEMENT PROGRAM
- 12:00 C. Greg Lutz**
CIRCULAR AND CYCLICAL MATING SYSTEMS TO MINIMIZE INBREEDING ACCUMULATION IN CLOSED POPULATIONS
- 12:15 Baba Usman Ibrahim**, Balogu Dennis Odionyenfe, Yunusa Abdu
FOOD AND FEEDING HABITS OF CICHLIDAE IN TAGWAI RESERVOIR, NIGER STATE, NIGERIA

NOAA SCIENCE INNOVATION SHOWCASE

Tuesday, February 20 8:30 AM - 12:30 PM Salon M

Chairs: Marcy Cockrell, Daniel Wieczorek

- 8:30 Daniel Wieczorek**
Session Introduction – WHAT IS A SCIENCE ADVICE PRODUCT?
- 8:45 Ron Johnson**, Joseph Dietrich, Bernadita Anulacion, Frank Sommers, Pete Nicklason, Sean Sol
DEVELOPING MACROALGAE FEED INGREDIENTS FOR MARINE FISH FEEDS
- 9:00 Kenneth Cain**, Joseph Dietrich, Veronica Myrsell, Wendy Olson, Jie Ma
DEVELOPING TOOLS AND STRATEGIES FOR PREVENTION OF ATYPICAL FURUNCULOSIS IN SABLEFISH *Anoplopoma fimbria*
- 9:15 Adam Luckenbach**, Yuzo Yanagitsuru, Edward Hayman, William Fairgrieve, Ten-Tsao Wong, Yonathan Zohar, Steven Roberts, Mackenzie Gavery
DEVELOPMENT OF A NOVEL METHOD FOR STERILITY INDUCTION IN FISH AND SHELLFISH AQUACULTURE
- 9:30 Alix Laferriere**, Henry Fleener, Angela Korabik, Jordan Hollarmsith
ADVANCEMENT OF PACIFIC OYSTER RESEARCH CAPACITY IN ALASKA THROUGH RESEARCH HATCHERY DEVELOPMENT AND FIELD TESTING
- 10:00 BREAK**
- 10:30 Julie Rose**, Ryan Morse, Christopher Schillaci
DEVELOPMENT OF A REGION-SCALE SHELLFISH HARVEST NUTRIENT CALCULATOR
- 10:45 Christopher Schillaci**, Julie Rose, Renee Mercaldo-Allen, Zachary Gordon, Paul Clark, Stephen Kirk, Lisa Milke, Ryan Morse
INTEGRATING INFORMATION ON BENEFICIAL SERVICES PROVIDED BY SHELLFISH AQUACULTURE INTO THE AQUACULTURE PERMITTING AND REVIEW PROCESS
- 11:00 Alix Laferriere**, Alicia Bishop, Connor Cleary, Alf Pryor, Lexa Meyer, Angela Korabik
ECOSYSTEM SERVICE EVALUATION OF KELP FARMS VERSUS NATURAL KELPS BEDS IN KODIAK ALASKA
- 11:15 Adriane Michaelis**, Suzanne Bricker, Jordan Hollarsmith, Julie Rose, Seth Theuerkauf
SHELLFISH AND SEAWEED AQUACULTURE ECOSYSTEM SERVICES HORIZON SCAN: PROJECT UPDATE

TUESDAY

- 11:30 Kristy L. Beard**
AQUACULTURE OPPORTUNITY AREAS: NATIONAL UPDATES
- 11:45 Alicia Bishop**, Chris Schillaci
AQUACULTURE OPPORTUNITY AREA IDENTIFICATION IN ALASKA
- 12:00 Christopher Schillaci**, James Morris, Alicia Bishop, Drew Resnick
SPATIAL MODELING FOR AQUACULTURE OPPORTUNITY AREA IDENTIFICATION IN ALASKA STATE WATERS

ROBOTICS AND ADVANCED TECHNOLOGY IN AQUACULTURE

Tuesday, February 20 8:30 AM - 12:30 PM Salon L

Chairs: Allen Pattillo, Matt Parker

- 8:30 John King**, Troy Rezek
PARTICLE DEPOSITION MODELING: AN IMPROVEMENT USING FLUME-BASED OBSERVATIONS FOR RED DRUM *Sciaenops ocellatus*
- 8:45 Rakesh Ranjan**, Harsh Shroff, Kata Sharrer, Scott Tsukuda, Christopher Good
A COMPUTER VISION TOOL FOR PRECISE AND RAPID FISH FILLET COLOR CATEGORIZATION
- 9:00 Per Arild Aland**
UNLOCKING THE POWER OF DIGITAL ASSET MANAGEMENT – NAVIGATING THE POSSIBILITIES AND OVERCOMING THE CHALLENGES
- 9:15 Sveinung Johan Ohrem**, Eleni Kelasidi, Herman Biørn Amundsen, Linn Danielsen Evjemo, Bent Haugaløkken, Oscar Nissen, Aya Saad, Martin Skaldebø, Marios Xanthidis
AQUACULTURE ROBOTICS RESEARCH AT SINTEF OCEAN – AUTONOMY, NAVIGATION, AND MOTION PLANNING DEDICATED TO IMPROVE EFFICIENCY, SAFETY AND FISH WELFARE
- 9:30 Steve Pattison**, Robert Summers
AUTOMATING OYSTER AQUACULTURE WITH THE SUN
- 9:45 Chiao-Yi Wang**, Alex Long, Guru Nandhan ADP, William Chen, Sandip Sharan Senthil Kumar, Allen Pattillo, Don Webster, Miao Yu, Yang Tao
THE SMART, SUSTAINABLE SHELLFISH AQUACULTURE MANAGEMENT (S3AM) – SMART PRECISION HARVESTING: SIMULATION MODEL AND FIELD TEST
- 10:00 Renu Ojha**, Jonathan van Senten
EX-ANTE COST-BENEFIT ANALYSIS OF SMART SUSTAINABLE SHELLFISH AQUACULTURE MANAGEMENT (S3AM) TECHNOLOGY

WOMEN IN AQUACULTURE

Tuesday, February 20 8:30 AM - 10:00 AM Salon D

Chairs: Angela Caporelli, Chelsea Walling

10:30 Ruth Driscoll-Lovejoy

A FUNNY THING HAPPENED ON MY WAY TO BECOMING A MARINE BIOLOGIST

10:45 Erin Legacki

SWIMMING UPSTREAM: BREAKING THROUGH BARRIERS TO GENDER EQUALITY IN AQUACULTURE

11:00 Kristine Cherry, Danielle Blacklock

EMPOWERING WOMEN THROUGH AQUACULTURE

11:15 Natalie Lord, Catherine Ashcraft, Julia Novak-Colwell, Lindsey Williams

OYSTER FARMING THROUGH A GENDER LENS: A PHOTOVOICE CASE STUDY

11:30 Angela J. Odero, Loren E. Odira

EMPOWERING WOMEN IN KENYAN AQUACULTURE: A CALL FOR SUSTAINABLE GROWTH

11:45 Jennica Lowell-Hawkins

I'M FINE, EVERYTHING'S FINE! DREAM JOBS, GENDER ROLES, AND FOLLOWING CHARM

12:00 Jessica Moss

IT'S A SMALL WORLD AFTER ALL; MY PATH TO OYSTER AQUACULTURE

12:15 Jackie Zimmerman

PASSION, DETERMINATION AND GRIT – WHERE IT CAN TAKE YOU

TUESDAY

ZEBRAFISH HUSBANDRY WORKSHOP AND SUMMIT - CONTINUED

Tuesday, February 20 8:30 AM - 5:00 PM Room 20

Chair: Bobbi Baur

- 9:00 Introduction**
ZIRC Update
UAB COURSE UPDATE
ZHA UPDATE/AALAS SUMMARY
IZFS Introduction
- Aquaneering
Katy Murray
Katie Dorris
Michelle Altemara
Kristen Kwan
- 9:45 Designing a Zebrafish Research Program to Engage Undergraduate Students**
Mary Beth Hawkins/St. Mary's U
- 10:15 BREAK**
- 10:30 Publishing Key Findings in Animal Care Science**
Steve Ekker/DPRI
- 11:00 Survey of Data Systems Used in Aquatic Facilities**
Dante D'India/Seattle Children's
- 11:30 Back to School - What Do We Really Know about Zebrafish Housing Density and Other Aspects of Housing Zebrafish?**
Petronella Kettunen/U Gothenburg
- 12:00 ZHA LUNCH**
- KEYNOTE SPEAKER**
- 2:00 Interagency Coordination to Encourage Science-Based Regulations**
Dr. Kathleen Hartman/Task Force on Regulatory Efficiency in Aquaculture
- 3:00 Zebrafish Diets: Looking Backwards and Forwards**
Steve Watts/U Alabama Birmingham
- 3:30 Health and Diseases of Zebrafish: State of the Science and Gaps**
Michael Kent/Oregon State U
- 4:00 Zebrafish Husbandry: Where We Are**
Zoltan Varga/ZIRC
- 4:30 FIRST ZEBRAFISH HUSBANDRY SUMMIT**
Drs. Watts, Kent, Sanders, Varga, Kettunen, Kwan, Ekker, and Audience
- 6:00 Social**

AQUACULTURE 101

Tuesday, February 20 8:30 AM - 12:30 PM Salon C

Chair: Kathleen Hartman

- 8:30 Casey Murray**, University of Florida/Tropical Aquaculture Laboratory
MINIMIZING THE USE OF LIVE FEEDS DURING FISH LARVICULTURE
- 9:00 Matt Smith**, YSI Xylem
WATER QUALITY CONSIDERATIONS FOR VARIOUS PRODUCTIONS SYSTEMS
- 9:15 Sarah Hoffman**, Merck Animal Health
THERE'S SOMETHING IN THE WATER: INNOVATIONS IN ENVIRONMENTAL QUALITY
- 10:00 BREAK**
- 10:30 Michele Walsh**, USDA APHIS VS
A TOOL YOU CAN USE – USDA'S UPDATED GUIDE TO STATE REGULATIONS ON AQUATIC ANIMAL PRODUCT MOVEMENT
- 11:00 Tom Sorby**, Kingfish Maine
CHALLENGES OF IMPORTING YELLOWTAIL KINGFISH BROODSTOCK FROM EUROPE
- 11:15 Angela Korabik**, NOAA Fisheries, Alaska Fisheries Science Center
AN OVERVIEW OF DISEASE AND PESTS ON CULTIVATED KELP, WITH A FOCUS ON ALASKA
- 11:45 Erin Legacki**, USDA ARS
LET'S TALK ABOUT SEX, BABY! (AN OVERVIEW OF THE REPRODUCTIVE PHYSIOLOGY AND ENDOCRINOLOGY OF FISH)

TUESDAY

LET'S HEAR FROM THE INDUSTRY ON THEIR WORKFORCE DEVELOPMENT NEEDS

Tuesday, February 20 8:30 AM - 12:30 PM Room 21

Chairs: LaDon Swann, Christian Brayden

The session will obtain input from farmers and supporting businesses to identify their workforce needs including the knowledge, skills, abilities and other characteristics that enable employees to gain employment and how to advance their careers. The session will inform future workforce development programs within organizations who provide workforce development such as the NOAA's National Sea Grant College Programs and Aquaculture Associations.

8:30 Farmer Panel

Bill Dewey, Taylor Shellfish Farms
Tom Houston, Harvest Select Catfish
Nicole Kirchhoff, Live Advantage Bait, LLC
Mark Kubecka, Kubecka Farm
Brittany Peachey, Hudson Valley Fish Farms
Megan Sorby, Pine Island Redfish
Jesse Trushenski, Riverence Farms

10:00 BREAK

10:30 Supporting Services

Christian Brayden, Maine Aquaculture Association
Craig Browdy, Zeigler Brothers, Inc.
Deborah Bouchard, Director, Maine Aquaculture Research Institute
Kola Garber, NOAA National Sea Grant College Program
Amy Stone, Aquatic Equipment and Design, Inc.
LaDon Swann, Mississippi-Alabama Sea Grant Consortium

AQUACULTURE KNOWLEDGE FROM OLD COOTS - VOLUME IV

Tuesday, February 20 8:30 AM - 12:30 PM Salon A

Chair: Bob Robinson

8:30 Jim Ekstrom – President of Ekstrom Aquaculture LLC – The Largest Producer of Hybrid striped Bass and Redfish in the US.

YOU DON'T KNOW WHAT YOU DON'T KNOW OR.... WHY IT IS IMPORTANT TO USE OTHER PEOPLE'S MONEY WHEN YOU START OUT

9:00 Phil Mackey – C.E.O Mount Lasson Trout and Steelhead – Mt Lasson, CA
50+ YEARS OF USEFUL OR USELESS INFORMATION ABOUT FARMING FISH

9:30 **Megan Davis** – Research Professor and Director, Queen Conch Lab, Florida Atlantic University

WHY I FELL IN LOVE WITH THE QUEEN OF THE SEA

10:00 **BREAK**

10:30 **John Hargreaves** – Freelance Aquaculture Consultant.

WHAT A LONG, STRANGE TRIP IT HAS BEEN: LESSONS LEARNED FROM MY AQUACULTURE PEREGRINATIONS

11:00 **Dallas Weaver**, PhD, P.E.

A BROAD VIEW OF RAS FROM THE SCHOOL OF HEAVY ACADEMICS AND HARD KNOCKS FROM REALITY

11:30 **Harry Daniels** – Senior Associate Dean – North Carolina State University

FROM FORKS IN THE ROAD TO HIGHWAYS: FISH TALES FROM A PSYCH MAJOR

12:00 **Nafisat M. Nasir**, Agafe K. Obiakalusi

CONSUMER PREFERENCE OF DRY CATFISH *Clarias gariepinus* (BURCHELL, 1822) PRESERVED WITH SWEET ORANGE PEEL *Citrus sinensis* L. (OSBECK, 1757)

FARM SERVICE AGENCY OVERVIEW OF DISASTER ASSISTANCE PROGRAM IMPROVEMENTS (ELAP, NAP)

Tuesday, February 20 8:30 AM - 10:00 AM Room 1

Chair: Steve Peterson

8:30 **Steven Peterson**, FSA Associate Administrator

OVERVIEW OF FSA DISASTER ASSISTANCE PROGRAMS – HOW WE HAVE EVOLVED

9:00 **Seth Cross**, FSA ELAP Program Manager

HISTORY OF ELAP AND FARM RAISED FISH

9:15 **Seth Cross**, FSA ELAP Program Manager, Safety Net Division

ELIGIBILITY/INVENTORY REPORTING/NORMAL MORTALITY/NOTICE OF LOSS/APPLICATION FOR PAYMENT

9:45 **Mike Walter**, FSA Deputy Director, Safety Net Division

WORKING WITH FSA STATE AND COUNTY OFFICES

10:00 **Audience Questions and Answers - FSA presenters**

TUESDAY

FLAVOBACTERIAL DISEASE MANAGEMENT (COLDWATER DISEASE, COLUMNARIS, AND NOVEL FLAVOBACTERIA)

Tuesday, February 20 10:30 AM - 5:00 PM Room 1
Chairs: Robert Durborow, Ken Cain, Haitham Mohammad

- 10:30 Thomas Loch**, Christopher Knupp, Sean Lennox, Megan Shavaliar, Mohamed Faisal, Myron Kibus, Nisha Shrestha
AN INTRODUCTION TO FLAVOBACTERIAL DISEASES AND MANAGEMENT: SOME PRACTICAL GUIDANCE FOR PRODUCERS
- 10:45 Taylor Heckman**, Zeinab Yazdi, Eric Pomaranski, Fernanda de Alexandre Sebastião, Kaveramma Mukkatira, Brent Vuglar, Kenneth Cain, Thomas Loch, Esteban Soto
FINTASTIC FLAVOBACTERIA AND WHERE TO FIND THEM: ATYPICAL FLAVOBACTERIAL PATHOGENS IN WESTERN U.S. AQUACULTURE
- 11:00 Brent Vuglar**, Jie Ma, Taylor Heckman, Esteban Soto, Kenneth Cain
VIRULENCE OF NOVEL FLAVOBACTERIACEAE ISOLATES FROM THE WESTERN UNITED STATES AND ASSESSMENT OF POTENTIAL CROSS-PROTECTION OF AN ATTENUATED BCWD VACCINE
- 11:15 Gregory Wiens**, David P. Marancik, Christopher C. Chadwick, Ross M. Reid, Keira Osbourn, Timothy D. Leeds
PROTEOMIC PROFILING OF BCWD RESISTANT AND SUSCEPTIBLE RAINBOW TROUT LINES AND IDENTIFICATION OF NOVEL BIOMARKERS
- 11:30 Nisha Shrestha**, Myron Kibus, Sean Lennox, Megan Shavaliar, Christopher Knupp, Fabiana Pilarski, Matthew Smith, Nicholas Phelps, Thomas Loch
INVESTIGATING THE GENO- AND SEROTYPIC DIVERSITY OF *Flavobacterium psychrophilum* INFECTING CAPTIVE REARED SALMONIDS OF THE NORTH CENTRAL REGION OF THE USA
- 11:45 Yongtao Zhu**, Seada Sloboda, Daqing Jiang, Xinwei Ge, Carly A. Beveridge, Gregory D. Wiens, Mark J. McBride, Tatiana Rochat, Eric Duchaud
PRE-METHYLATION OF FOREIGN DNA OVERCOMES THE RESTRICTION-MODIFICATION BARRIER OF *Flavobacterium psychrophilum* AND ALLOWS EFFICIENT SPECIES-WIDE GENETIC MANIPULATION
- 12:00 Timothy Leeds**, Jason Evenhuis, Gregory Wiens
SELECTIVE BREEDING TO IMPROVE RESISTANCE TO COLUMNARIS DISEASE IN RAINBOW TROUT

TUESDAY

12:15 Haitham Mohammed, Nicole Thunes, Jason Evenhuis, Ryan Lipscomb, Mark McBride
SECRETED PROTEASES INFLUENCE *Flavobacterium columnare*'s VIRULENCE IN ZEBRAFISH AND RAINBOW TROUT

12:30 LUNCH

1:30 Benjamin LaFrentz, Stanislava Králová, Claire R. Burbick, Trevor L. Alexander, Conner W. Phillips, Matt J. Griffin, Geoffrey C. Waldbieser, Julio C. García, Fernanda de Alexandre Sebastião, Esteban Soto, Thomas P. Loch, Mark R. Liles, Kevin R. Snekvik
COLUMNARIS DISEASE IS CAUSED BY *Flavobacterium columnare* AND THREE NEWLY DESCRIBED *Flavobacterium* spp.

1:45 Benjamin LaFrentz, Lester H. Khoo, Mark L. Lawrence, Lora Petrie-Hanson, Larry A. Hanson, Wes A. Baumgartner, William G. Hemstreet, Anita M. Kelly, Julio C. García, John P. Shelley, Amber E. Johnston, Timothy J. Bruce, Matt J. Griffin
Flavobacterium covae IS THE PREDOMINANT SPECIES OF COLUMNARIS-CAUSING BACTERIA IMPACTING THE CHANNEL CATFISH *Ictalurus punctatus* INDUSTRY IN THE SOUTHEASTERN USA

2:00 Timothy Bruce, Amber Johnston, Allison Wise, Courtney Harrison, Brent Vulgar, Jason Abernathy, Benjamin LaFrentz
ASSESSMENT OF COINFECTION WITH *Flavobacterium covae* AND CHANNEL CATFISH VIRUS IN CHANNEL CATFISH *Ictalurus punctatus* FINGERLINGS

2:15 Ryan Maxwell, Jie Ma, Veronica Myrsell, Megan Cox, Ken Cain
CONCURRENT INFECTIONS OF *Flavobacterium psychrophilum* AND *Flavobacterium columnare* IN RAINBOW TROUT FINGERLINGS *Oncorhynchus mykiss*

STRIPERHUB: STRIPED BASS AND HYBRID STRIPED BASS

Tuesday, February 20 10:30 AM - 12:30 PM Salon B

Chairs: Ben Reading, Eric Herbst, Russell Borski

10:30 Bart Green, Steven Rawles, T. Gibson Gaylord, Matt McEntire, Candis Ray, Carl Webster
PRODUCTION OF HYBRID STRIPED BASS AND WATER QUALITY IN SPLIT PONDS COMPARED TO TRADITIONAL EARTHEN PONDS

10:45 Linas Kenter, Michael Coogan, David Berlinsky
STRESS AND GROWTH RESPONSE OF PURE, PALMETTO, AND SUNSHINE STRIPED BASS *Morone saxatilis* AT DIFFERENT TEMPERATURES

- 11:00 Jamie Mankiewicz**, William F. Lee, Benjamin J. Reading, Russell J. Borski
EFFECTS OF REDUCED ALTERNATE DAY FEEDING ON THE GROWOUT OF DOMESTIC STRIPED BASS *Morone saxatilis* IN RECIRCULATING AQUACULTURE
- 11:15 Anthony Siccardi**, Anthony Sample, Magnus Krever, Cristina Richardson
EVALUATION OF HEMP SEED PROTEIN CONCENTRATE ON HEALTH INDICES AND AS A PARTIAL FISH MEAL REPLACEMENT IN STRIPED BASS *Morone saxatilis* DIETS
- 11:30 Linnea Andersen**, Valerie N. Williams, Taufika Islam Williams, Leonard B. Collins, Benjamin J. Reading
STRIPED BASS *Morone saxatilis* EGG QUALITY: PROTEOMIC PROFILING OF PEOVULATORY OOCYTES AND OVULATED EGGS VIA MACHINE LEARNING

**SOCIAL DIMENSIONS OF AQUACULTURE:
BUILDING A COMMUNITY OF PRACTICE**

Tuesday, February 20 10:30 AM - 5:00 PM Salon D

Chairs: Adriane Michaelis, Emily Whitmore

- 1:30 Adriane Michaelis, Emily Whitmore**
SOCIAL DIMENSIONS SESSION OVERVIEW
- 1:37 Adriane K. Michaelis**
CONSIDERING THE SOCIAL IMPACT OF AQUACULTURE
- 1:44 Trixie Betz**
DIGITAL CAMPAIGN STRATEGIES TO ADVANCE PUBLIC SUPPORT FOR AQUACULTURE IN MAINE
- 1:51 Emily Whitmore**, Anne Langston Noll, Chris Davis
A GUIDE FOR SHELLFISH AND SEAWEED FARMERS IN MAINE: WORKING TOWARDS SOCIAL LICENSE TO OPERATE
- 2:00 Don Schreiner**, Amy Schrank
BUILDING PARTNERSHIPS AND SOCIAL LICENSE THROUGH AQUACULTURE ENGAGEMENT IN THE GREAT LAKES REGION
- 2:07 Anoushka Concepcion**, Gabriela Bradt, Meg Chadsey, Antoinette Clemetson, Melissa Good, Catherine Janasie, Stephanie Otts, Joshua Reitsma, Jaclyn Robidoux
CREATING A PLATFORM FOR MULTI SECTOR COLLABORATION

- 2:14 Megan Davis**, Becky Holt
A QUEEN CONCH FARM IN EVERY CARIBBEAN COUNTRY
- 2:21 Russell Grice**, Jillian Sower, Kelly Dunning, LaDon Swann, Steve Sempier
ALABAMA-MISSISSIPPI OYSTER COMMUNITY OF PRACTICE
- 2:30 Grace Grimes**, Jen Shaffer, Joshua Drew
STAKEHOLDER PERCEPTIONS OF OYSTER SERVICES: A MIXED METHODS APPROACH TO MAPPING SERVICES TO IMPROVE MANAGEMENT EFFICIENCY
- 2:37 Hayley R. Lemoine**, Sarah E. Lester
LIVELIHOOD DIVERSIFICATION AND TRANSITIONS IN SHELLFISH AQUACULTURE ON THE EAST COAST OF THE U.S.
- 2:44 Natalie Lord**, Catherine Ashcraft, Lindsey Williams, Julia Novak Colwell
GENDER ANALYSIS FOR AQUACULTURE DEVELOPMENT: A CASE STUDY FROM MAINE AND NEW HAMPSHIRE OYSTER FARMING INDUSTRY
- 2:51 Nathan Smith**, Laura Rickard
FROM CONFLICT TO COLLABORATION: EXPLORING THE SOCIAL AND ECOLOGICAL DIMENSIONS OF RECIRCULATING AQUACULTURE DEVELOPMENT THROUGH A MIXED METHODS APPROACH
- 3:00 Claire Gonzales**, Halley Froehlich
THE VALUE OF CO-LOCATING AQUACULTURE WITH RENEWABLE ENERGY: PERSPECTIVES OF CALIFORNIA'S COMMERCIAL FISHERMEN
- 3:07 Caitlin Cleaver**, Robin Fail, Molly Miller, Emily Farr, Jessica Batchelder, Marissa McMahan, Maeve Staab
WHO'S WHO IN MAINE AQUACULTURE? UNDERSTANDING THE LANDSCAPE OF AQUACULTURE PRIORITIES AND FUNDING
- 3:14 Ruth Driscoll-Lovejoy**
GROW IT HERE, DO IT RIGHT: THE COALITION FOR SUSTAINABLE AQUACULTURE
- 3:21 Annie Schatz**, Melissa Good, Sherry Larkin, Elizabeth Lenz, Shauna Oh, Pamela Plotkin, Cathlyn Davis, Susan White, Gayle Zydlewski, Jenna Clark, Hannah Cooper, Fredrika Moser
CONNECTING SEA GRANT, THE NATIONAL CENTERS FOR COASTAL OCEAN SCIENCES, AND COASTAL-OCEAN COMMUNITIES TO IMPROVE SUSTAINABLE AQUACULTURE SITING AND DEVELOPMENT PROCESSES

3:35 Adriane Michaelis, Emily Whitmore
FACILITATED DISCUSSION ON SOCIAL DIMENSIONS OF AQUACULTURE
AND A COMMUNITY OF PRACTICE

4:30 Full Panel
OPPORTUNITY FOR NETWORKING

NUTRITION - PROTEIN

Tuesday, February 20 11:30 AM - 5:00 PM Salon J

Chair: Vikas Kumar

11:30 Fernando Yamamoto, Jing Huang, Camilo Barazeta, Steve Craig, Caitlin Older, Bradley Richardson, Matt Griffin, Grant Reifers, Penelope Goodman, Delbert Gatlin III

EXPLORING THE NUTRITIONAL VALUE OF FERMENTED CORN PROTEIN AS A REPLACEMENT FOR SOYBEAN MEAL IN CHANNEL CATFISH *Ictalurus punctatus* JUVENILE FEEDS: IMPACTS ON PRODUCTION PERFORMANCE, INTESTINAL HEALTH, AND DISEASE RESISTANCE

11:45 Md Shah Alam, Patrick Carroll, Wade Watanabe, Maylyn Hinson, Liza Herring, Kaitlyn Hudson, Guillaume Salze, Larry Feinberg
REPLACEMENT OF MENHADEN FISH MEAL PROTEIN BY SINGLE CELL PROTEIN MEAL IN THE DIET OF JUVENILE BLACK SEA BASS *Centropristis striata*

12:00 Noah Jenkins, Kasondra Miller, Pedro Carvalho, Fernando Yamamoto, Jeffery Tomberlin, Delbert Gatlin
EVALUATION OF DIETARY BLACK SOLDIER FLY LARVAE MEALS AND LAURIC ACID IN PRACTICAL DIETS FOR LARGEMOUTH BASS *Micropterus nigricans*

12:15 Magida Tabbara, Sidra Nazeer, D. Allen Davis
USE OF HYDROLYZED FEATHER MEAL AS PARTIAL REPLACEMENT OF SOYBEAN MEAL IN *Litopenaeus vannamei* DIETS

12:30 LUNCH

1:30 Magida Tabbara, Abigeal Adeyemi, D. Allen Davis, Vikas Kumar, Timothy Bruce
BLACK SOLDIER FLY FRASS AS PARTIAL SUBSTITUTE FOR SOYBEAN MEAL IN CHANNEL CATFISH *Ictalurus punctatus* DIETS

1:45 Van To, André Dumas, Ivan Tankovski, John Brennan, Jason Hargreaves, David Dzisiak
NUTRITIONAL VALUE OF AN AQUEOUS-PROCESSED CANOLA PROTEIN CONCENTRATE FOR ATLANTIC SALMON: DIGESTIBILITY AND GROWTH PERFORMANCE

TUESDAY

- 2:00 Abel Paladines-Parrales**, Arnold Gutierrez, Khanh Nguyen, Jairo Gonzalez, Magida Tabbara, Allen Davis
EVALUATING THE EFFECTS OF DIFFERENT SOYBEAN MEAL SOURCES ON FEED UTILIZATION AND GROWTH PERFORMANCE IN A CONTROLLED ENCLOSED ENVIRONMENT FOR CHANNEL CATFISH *Ictalurus punctatus*
- 2:15 Khanh Nguyen**, Cristhian Andres, Adela Araujo, Trenton Corby, Melanie Rhodes, Timothy Bruce, D. Allen Davis
EFFECTS OF DIFFERENT SOYBEAN LEVELS AS MAIN PROTEIN SOURCE ON GROWTH PERFORMANCE AND FEED UTILIZATION EFFICIENCY OF PACIFIC WHITE SHRIMP *Litopenaeus vannamei*
- 2:30 Abdulmalik A. Oladipupo**, Kevin R. Stuart, Timothy J. Bruce, Mark A. Drawbridge, D. Allen Davis
IMPACT OF ADVANCED SOYBEAN VARIANTS ON CALIFORNIA YELLOWTAIL *Seriola dorsalis*: GROWTH PERFORMANCE, INTESTINAL MORPHOLOGICAL AND HEALTH
- 2:45 Khanh Nguyen**, Aya Hussain, Jorge Cuéllar-Anjel, Julio Garcia, Timothy Bruce, D. Allen Davis
EFFECTS OF DIFFERENT SOYBEAN INGREDIENTS AS MAIN PROTEIN SOURCE ON GROWTH PERFORMANCE, FEED UTILIZATION EFFICIENCY, INTESTINAL HISTOLOGY, AND PHYSIOLOGICAL GENE EXPRESSION OF PACIFIC WHITE SHRIMP *Litopenaeus vannamei* IN BIOFLOC SYSTEM
- 3:00 Khanh Nguyen**, Cristhian Andres, Adela Araujo, Trenton Corby, Melanie Rhodes, S. Tilton, Timothy Bruce, D. Allen Davis
EFFECTS OF HIGH PROTEIN DISTILLERS DRIED GRAINS WITH YEAST AS PRIMAY PROTEIN SOURCE ON GROWTH PERFORMANCE, FEED UTILIZATION EFFICIENCY, HAEMOLYMPH PARATEMETERS, AND PHYSIOLOGICAL GENE EXPRESSION OF PACIFIC WHITE SHRIMP *Litopenaeus vannamei*
- 3:15 Zenith Gaye Orozco-Bautista**, Vhey Casison
GROWTH PERFORMANCE AND mRNA EXPRESSION OF INTESTINAL AMINO ACID TRANSPORTERS IN TILAPIA *O. niloticus* FED DIFFERENT DIETARY PROTEINS
- 3:30 Trenton Corby**, Trinh Ngo, Khanh Nguyen, Adela Araujo, Leila Strelbel, Stephanie Velasquez, Melanie Rhodes, Timothy Bruce, D. Allen Davis
COMPARISON AND EFFICACY OF SOY-BASED INGREDIENTS IN PRACTICAL DIETS FOR FLORIDA POMPANO *Trachinotus carolinus*
- 3:45 Ali Hamidoghli**, Brian C. Small, Ken Overturf, Vikas Kumar
SELECTION OF RAINBOW TROUT *Oncorhynchus mykiss* FAMILIES FOR IMPROVED FEED UTILIZATION EFFICIENCY WITH SOYBEAN-BASED DIETS

- 4:00 Krishna Singha**, Michael Phelps, Ken Overturf, Da Chen, Ron Hardy, Vikas Kumar
ESTABLISHING A FEEDING PROTOCOL TO IMPROVE THE PERFORMANCE AND FILLET QUALITY OF RAINBOW TROUT *Oncorhynchus mykiss* FED SOY-BASED DIETS FOR 7 MONTHS
- 4:15 Krishna Singha**, Michael Phelps, Ken Overturf, Da Chen, Ron Hardy, Vikas Kumar
A NOVEL FEEDING STRATEGY BASED ON MUSCLE FIBRE RECRUITMENT TO MAXIMIZE THE PERFORMANCE OF RAINBOW TROUT *Oncorhynchus mykiss*
- 4:30 Mohammad Zarei**, Nicholas Poe, Michael Schwarz
UNLOCKING THE POTENTIAL OF SORGHUM PROTEINS: EXTRACTION APPROACHES, AMINO ACID PROFILES, AND FUNCTIONAL CHARACTERIZATION
- 4:45 Vikas Kumar**, Piper Evans
WHOLE INSECT LARVAL MEAL AS A FUNCTIONAL FEED INGREDIENT TO IMPROVE THE SOYBEAN MEAL BASED DIETS UTILIZATION IN ATLANTIC SALMON *Salmo salar*

SALMONIDS

Tuesday, February 20 1:30 PM - 4:00 PM Room 21

Chair: Matt Hawkyard

- 1:30 Brian Peterson**, Gary Burr, Tyler Firkis, Christopher Good
CHARACTERIZING GENETIC X ENVIRONMENT INTERACTIONS OF ATLANTIC SALMON *Salmo salar* SELECTED FOR GROWTH IN NETPENS THROUGH EVALUATIONS IN RECIRCULATING AQUACULTURE SYSTEMS
- 1:45 Erin L. Legacki**, Thomas A. Delomas, Melissa Milligan, Brian C. Peterson
MODELING EMBRYO SURVIVAL: GENETIC AND ENVIRONMENTAL INFLUENCES ON EYE-UP RATE IN A NORTH AMERICAN ATLANTIC SALMON SELECTIVE BREEDING PROGRAM
- 2:00 Halli Bair**, Heather Hamlin, Robert Morefield
ESTABLISHING PREDICTIVE METRICS FOR ATLANTIC SALMON *Salmo salar* BROODSTOCK AND OFFSPRING
- 2:15 Khalid Freij**, Beth Cleveland, Peggy Biga
IMPROVING RAINBOW TROUT *Oncorhynchus mykiss* GROWTH PERFORMANCE THROUGH OPTIMIZATION OF DIET-EPIGENETIC INTERACTIONS

- 2:30 **Beth Cleveland**, Lisa Radler, Karine Dias, Vincent Veron, Iban Seiliez
CHAPERONE-MEDIATED AUTOPHAGY REGULATES NUTRIENT METABOLISM, ENERGY BALANCE, AND OXIDATIVE STRESS IN RAINBOW TROUT
- 2:45 **Mari Lie Larsen**, Irja Vormedal
THE ENVIRONMENTAL EFFECTIVENESS OF SEA LICE REGULATION: COMPLIANCE AND CONSEQUENCES FOR FARMED AND WILD SALMON
- 3:00 **Robert Morefield**, Heather Hamlin
NET PEN PLACEMENT WITHIN A SALMON AQUACULTURE FARM AFFECTS SALMON LICE *Lepeophtheirus salmonis* INFESTATION RATES

WATER QUALITY

Tuesday, February 20 1:30 PM - 3:30 PM Room 16

Chair: Dayan Perera

- 1:30 **Vasu Jayaprakas**, Ranju Radhakrishnan
ROLE OF FRESH WATER FREE LIVING PROTOZOANS AS BIOINDICATORS AND BIOREMEDIATION TOOLS IN VEMBANADU LAKE, KERALA, INDIA, AN IMPORTANT RAMSAR SITE
- 1:45 **Paolo Pastorino**, Monia Renzi, Giuseppe Esposito, Damià Barceló, Marino Prearo
OCCURRENCE OF MICROPLASTICS IN AQUACULTURE SYSTEMS: SOURCES, ECOLOGICAL RISKS, EFFECTS, AND MITIGATION APPROACHES
- 2:00 **Nima Pahlevan**, William Wainwright, Navid Golpayegani, Akash Ashapure, Brandon Smith, Ryan O'Shea, Sakib Kabir, Arun Saranathan
STREAM – A SATELLITE-BASED WATER-QUALITY MONITORING SYSTEM FOR EFFECTIVE ASSESSMENT OF AQUACULTURE OPERATIONS
- 2:15 **Kayla McKinley**, Ali Parsaeimehr, Gulnihal Ozbay
USING ALGAL TURF TECHNOLOGY TO REMOVE EXCESS NUTRIENTS AND EVALUATE BIOMASS POTENTIAL
- 2:30 **Kristin Elliott**
USING DATA MONITORING TO COLLECT DISSOLVED OXYGEN AND TEMPERATURE WHEN ACCESSING WATER QUALITY AND ITS IMPACT ON FISH HEALTH, AN INTRODUCTION TO THE MINIDOT® CLEAR LOGGER
- 2:45 **Emily Hebert**, Benjamin Southwell, Barbara Evans, Derek Wright
AVOIDING METAL TOXICITY IN CLOSED LOOP AQUAPONICS

- 3:00 Toyosi Igejongo**, Titilope Olaley
CONCENTRATION OF HEAVY METALS IN *Parachanna obscura* AND ITS IMPLICATION TO HUMAN HEALTH IN NIGERIA
- 3:15 Brian Ott**
INTENSIVE AERATION LEADS TO NITROGEN OXIDATION IN EARTHEN CATFISH PONDS

**PROMOTING RESILIENCE IN U.S. AQUACULTURE
WITH INNOVATIVE MARKETING STRATEGIES
AND UNIQUE PARTNERSHIPS:
DIVERSE, COMMUNITY PROJECTS FUNDED THROUGH
NOAA FISHERIES**

Tuesday, February 20 1:30 PM - 5:00 PM Salon L
Chair: Clifford Cosgrove

- 1:30 Daniel Namur**, Financial Assistance Division Chief, NOAA Fisheries
PROMOTING U.S AQUACULTURE WITH DIVERSE COMMUNITY FOCUSED GRANTS FUNDED THROUGH NOAA FISHERIES
- 1:45 Raimundo Espinoza**, Executive Director, Conservación ConCiencia;
Megan Davis, Florida Atlantic University, Harbor Branch Oceanographic Institute
BUILDING COMMUNITY BASED AQUACULTURE CAPACITY IN THE CARIBBEAN: A TRANSFORMATIVE QUEEN CONCH RESTORATION PARTNERSHIP

The queen conch is an important fishery in the Caribbean and is overfished. The closed season in Puerto Rico’s jurisdictional water is August 1 to October 31, and harvest has been prohibited since 1997 in the U.S. EEZ off of Puerto Rico. Most conch fished in Puerto Rico are consumed locally with little export. With the decline in conch populations in state and federal waters, closed seasons, and disruption of conch habitats from hurricanes, conch is a prime candidate for aquaculture in Puerto Rico. The project goal will expand on the existing S-K NOAA supported Aquaculture Center, which is located at the Naguabo Fishing Association, to produce conch juveniles for restoration and sustainable seafood. Local fishers, technicians and interns will operate the aquaculture operation in Naguabo and at two additional fishing associations. Workforce development and training in aquaculture practices for fishers and community members will be conducted. This project will also investigate the market for queen conch shells, a by-product of the fishery. The project serves as a model that can be transferred to more fishing communities in Puerto Rico.

- 2:00 Mario Marquez**, Texas A&M Sea Grant
EXPANDING CULTIVATED OYSTER MARICULTURE IN TEXAS

TUESDAY

With Texas becoming the last state in the U.S. to legalize oyster aquaculture, there is a large potential for industry growth and expansion. At the same time, many of the Texas wild oyster fishery dependent communities have also been negatively affected due to permanent bay closures of over 2,000-acres affecting mainly socio-economically underrepresented minority fishing communities. Texas Sea Grant aims to train wild harvesters in oyster aquaculture and create two oyster aquaparks in which farmers can obtain parcels to facilitate more farmers and grow the aquaculture industry.

2:15 Azure Bouré, Suquamish Tribal Member; Traditional Food and Medicine Program Coordinator, The Indigenous Aquaculture Collaborative Network; Ryan Crim, Puget Sound Restoration Fund

BASKETS OF COCKLES IN FIELDS OF GEODUCK: ASSESSING *Clinocardium nuttallii* ABUNDANCE IN GEODUCK FARMS ACROSS PUGET SOUND

Basket cockles (*Clinocardium nuttallii*) are a fast growing, medium-sized bivalve native to the west coast of North America that are prized by many Native American Tribes in the region. Over the past several decades, there has been a noted decrease in their availability by indigenous subsistence harvesters, prompting new avenues of research into this species' population genetics, vulnerability to a transmissible cancer, and opportunities for restoration. These investigations led collaborators at the Suquamish Tribe and Puget Sound Restoration Fund (PSRF) to connect with shellfish farmers and learn of an unlikely source of wild-caught basket cockles - PVC tubes and mesh sleeves used for planting geoduck seed, which inadvertently protect any cockles that settle inside. Many farmers see these basket cockles as a nuisance as their densities can be so high they are believed to be competing with geoduck for resources. Therefore some farmers will make the effort to remove cockles from tubes, leaving them on the beach or selling them for minimal profit to crab fishers. Here, we identified an opportunity to build a bridge between shellfish growers and Coast Salish Tribes interested in increased access to basket cockles. We have conducted population surveys at several geoduck farms to estimate the scale of this potential resource. We have also developed and tested a pathway for harvesting, transporting, and distributing cockles collected from geoduck farms to the Suquamish Tribal community. Here we will share our results to date and discuss the restoration implications moving forward.

2:30 Nina Hapner, Managing Director of Natural Resources and Dan Swezey, Director for Oceans and Aquaculture, Kashia Band of Pomo Indians
DEVELOPING DOMESTIC FORMULATED FEEDS AND SEA CUCUMBER POLYCULTURE INTEGRATION FOR CALIFORNIA ABALONE AQUACULTURE AND ABALONE CONSERVATION PRODUCTION

Over the course of the last decade, the West Coast of the United States has experienced a series of marine heatwaves. Impacts from these heatwaves have triggered the loss of over 90% of Northern California's kelp forests. Kelp loss has triggered starvation conditions for wild red abalone (*Haliotis rufescens*) and the closure of the fishery for this highly prized shellfish, which depends on kelp as a primary food source. In response to the fishery collapse, The Kashia Band of Pomo Indians of the Stewarts Point Rancheria, a Native Nation located in Sonoma County California, is working to establish a new Tribally owned and operated

aquaculture farm that will produce red abalone. This farm will play a role in producing abalone for commercial seafood sales as well as producing abalone for wild outplanting to restore the declining fishery in collaboration with regional partners. As part of this effort, the Tribe is pursuing new feed technologies that utilize milled and dried grape marc meal, derived from California winery waste, as a primary ingredient. This technology, which takes advantage of a plentiful agricultural resource, may represent a viable alternative to current abalone production models based on kelp. This effort is also being coupled with the experimental co-culture of abalone with California sea cucumbers (*Parastichopus californicus*), a lucrative export species which has been experimentally shown to maintain high growth rates in captive co-association with abalone. The Tribe hopes that these activities will lead to the creation of new markets and opportunities for domestic U.S. aquaculture, while boosting efforts to restore declining populations of abalone in California.

2:45 Albert Gaudé, Coastal Fishery Agent, Louisiana Sea Grant Program
LOUISIANA CLAMS: FOUNDATION OF NOVEL CULINARY BIVALVES IN COMMERCE

The presence of the native bivalve, *Rangia cuneata*/ Gulf Wedge Clam, is abundant in Louisiana's brackish waters. Although historically consumed by First Nation occupants of the coastal regions, present day cultural preferences for other bivalves have all but deleted these bivalves from culinary attention. The primary resistance to general popularity has been the sometimes-strong odor of geosmin, a metabolite found in blue-green algae which are often filtered and digested by *Rangia*. Recent refinements in depuration methods of alleviating the negative impact of geosmin has opened potential acceptance to this locally novel bivalve. To adjust for this opportunity, Louisiana Sea Grant has orchestrated official amendments in 2015 state regulations to allow for legal commercial harvest of *Rangia*, thus opening a way for initiating availability to the public via retail seafood outlets. With the refined techniques in palatability through depuration, this proposal will introduce both culinary and public consumers to this novel bivalve.

3:00 Justin Manley, University of Georgia, Marine Extension and Georgia Sea Grant
DETERMINING THE ECONOMIC VIABILITY OF THE DIVERSIFICATION OF THE GEORGIA HARD CLAM INDUSTRY INTO SOUTHERN QUAHOG, *MERCENARIA CAMPECHIENSIS*, MARICULTURE: A PERFORMANCE COMPARISON BETWEEN TWO CLAM SPECIES

Northern hard clam, *Mercenaria mercenaria*, mariculture has contributed to an increase in the landings value of clams harvested in Georgia by approximately four hundred percent between 2009 and 2018 from \$603,290 to \$2,469,644, respectively (GA DNR CRD, 2019). As clam mariculture expands Georgia industry members have indicated that improving production efficiency, estimation, product diversification, and market accessibility using alternative commercial species are essential to continued growth and success. To address industry concerns a commercial scale intertidal performance trial was conducted using 1.4 million southern (*Mercenaria campechiensis*) and 1.8 million northern hard clam seed distributed between three grow-out locations within the Sapelo Sound Estuarine System, GA. Southern hard clams are purported to have greater growth rates and heat tolerance

but a shorter shelf life than northern hard clams making them an ideal candidate for flash frozen (IQF) product lines. Performance metrics collected for comparison between species included clam survival, growth, condition index, and biomass. Clam field data will be used to project final clam harvest at each research location for both clam species and validated with actual clam harvest reported by Sapelo Sea Farms, L.L.C. for purposes of return on investment (ROI) estimations. Project progress to be discussed herein.

3:15 Kira Kawano, Katuvi Consulting

HOOK, LINE, & SOCIAL MEDIA: A CASE STUDY USING DIGITAL MARKETING TO MOTIVATE CONSUMER PARTICIPATION IN THE SAN DIEGO SEAFOOD SYSTEM

San Diego's fishing industry, which consists of about 130 commercial fishers and a growing number of seaweed and shellfish farmers, provide fresh, locally caught seafood to an ever-growing community of consumers wishing to make positive environmental and health choices. Yet, much of the San Diego public remains naïve about the diversity and availability of these sustainable and nutritious resources practically at their doorstep. The goal of this project is to build and execute a consumer awareness digital marketing campaign leveraging the existing Fishful Future website and Instagram accounts, a digital newsletter, a second social media account, and influencer marketing. This campaign will increase consumer awareness and familiarity with locally landed seafood species, the local seafood system, and home culinary approaches that are tailored for cultural relevance to the heterogeneity communities living in San Diego. By working with the fishing community, chefs, a diverse cross-section of community influencers, and seafood consumers, this campaign will raise the profile of locally landed seafood for consumers and support the need of San Diego fishers to market their products directly to consumers in a market flooded with imports.

3:30 Diane Kim, CEO Holdfast Aquaculture

A SEAFOOD EQUITY HUB: ADDRESSING BARRIERS TO SEAFOOD IN LOW-INCOME FOOD-INSECURE COMMUNITIES USING DOMESTIC PRODUCTION AND SUPPLY CHAINS

The success of the U.S. seafood industry over the long-term will be reliant on broadening its consumer base; improving access is good for the bottom line. To this end, we aim to develop a seafood distribution framework (i.e., Seafood Equity Hub) which expands sustainably grown aquaculture products to new food markets in lower-resourced and culturally diverse communities across Los Angeles. We see seafood-focused food hubs as a natural extension of 'community supported fisheries', with the additional integration of intermediary consumers (i.e., restaurateurs, retailers, community based organizations) that mitigate seafood producer costs associated with marketing, distribution, and consumer education. Such a model allows for competitive pricing for producers while supporting affordable access to lower-resourced consumers. This effort will 1) Establish an actionable framework for a Seafood Equity Hub sustained in LA County; 2) Continue to build demand for and access to local aquaculture products among lower-resourced communities of color in Los Angeles; these communities are a significant and untapped consumer base with strong cultural relationships to seafood; and 3) Expand evidence of sustainable and profitable business practices that improve market access to domestic seafood products.

3:45 Alana Quintasket, Vice-Chairwoman, Swinomish Indian Tribal Community
BUILDING RESILIENCY IN TRIBAL FISHING COMMUNITIES: USING
INDIGENOUS AQUACULTURE TECHNIQUES TO ENHANCE CLAM
PRODUCTION

The Swinomish Indian Tribal Community (SITC) is reviving an ancient mariculture practice by installing the first known present-day clam garden in the United States. Clam gardens are intertidal features modified by coastal Indigenous people (e.g., creating intertidal terraces to alter beach slope and substrate) to enhance clam habitat for optimal shellfish production. Healthy and productive shellfish beds provide important local foods and ecosystem services as well as support for human well-being. Unfortunately, recent declines in native clam species in the Pacific Northwest have generated concern about the sustainability of these resources for future generations. To address these concerns, SITC plans to utilize clam gardens to promote the integration of traditional ecological knowledge in contemporary resource management, encourage local food security, and provide a model for other coastal fishing communities. The proposed activities will leverage funds to construct a clam garden and study socio-ecological change associated with clam gardening. Moreover, clam gardens are readily adaptable to sea level rise and may be used as a climate change adaptation tool. Thus, information produced by this project will be transferable to other fishing communities interested in increasing clam production while utilizing a unique adaptation strategy and promoting sustainable fishing practices.

TUESDAY

4:00 Harmony Lu, Lindsay Daman, Fishadelphia
FISHADELPHIA: EXPANDING A SUCCESSFUL PROGRAM CONNECTING
NJ SEAFOOD HARVESTERS WITH CULTURALLY AND ECONOMICALLY
DIVERSE SEAFOOD CONSUMERS

Building domestic markets for locally caught seafood is a critical strategy for supporting resilience of US small-scale fishing communities. Consumers of color and low-income consumers represent a largely untapped and high potential market for local seafood marketing. This project will build on the success of Fishadelphia, a local initiative working to connect NJ seafood harvesters with culturally and economically diverse consumers, expanding the program's reach to a new group of retail customers as well as a diverse group of restaurants.

4:15 Alana Quintasket, Vice-Chairwoman, Swinomish Indian Tribal Community;
Raimundo Espinoza, Executive Director, Conservación ConCiencia; Nina Hapner,
Managing Director of Natural Resources, Kashia Band of Pomo Indians; Dr.
Talia Young, Director, Fishadelphia; Azure Boure, Traditional Food and Medicine
Program Coordinator, The Indigenous Aquaculture Collaborative Network;
Huntley Penniman, Founder, Katuvi ; Diane Kim, CEO Holdfast Aquaculture
PROMOTING DIVERSITY AND INCLUSION THROUGH COMMUNITY BASED
AQUACULTURE

Town Hall Style Discussion with many of the afternoons presenters that have implemented projects with a focus on diversity and inclusion.

AQUACULTURE THROUGH THE YEARS, HOW I GOT HERE!

Tuesday, February 20 1:30 PM - 3:30 PM Salon B

Chair: Angela Caporelli

- 1:30 Benjamin Young**, Ali AL Shaikhi
STATUS AND OUTLOOK OF AQUACULTURE CAREERS IN SAUDI ARABIA:
HOW WE WORK IN THE MIDDLE EAST
- 1:45 Dallas L. Flickinger**
DON'T BE AFRAID TO GO OFF THE BEATEN PATH
- 2:00 Becky Holt**
MY JOB: UNEXPLAINABLE SINCE 2008
- 2:15 Barbara I. Evans**
I DIDN'T REALIZE, IT WAS ALWAYS AQUACULTURE
- 2:30 Angee Doerr**
CATFISH IN KENYA TO OYSTERS IN OREGON: MY PATH FROM
EXPEDITIONARY TO EXTENSION AQUACULTURE
- 2:45 Greg Lutz**
IF YOU FIND A PATH WITH NO OBSTACLES, IT PROBABLY DOESN'T LEAD
ANYWHERE
- 3:00 Kathleen Hartman**
HOW DID I GET HERE?
- 3:15 Jill Fisk**
MY JOURNEY INTO AQUACULTURE – A PLANT GIRL IN A FISH WORLD
- 3:30 Omolola Betiku**
STATUS OF AQUACULTURE PRODUCTION IN THE DEVELOPING AFRICAN
COUNTRIES – AN INSIGHT INTO THE GAMBIA'S FISHERY SECTOR

TUESDAY

WORKSHOP: OPEN HARDWARE TO SUPPORT SAFEGUARDING AQUATIC GENETIC RESOURCES

Tuesday, February 20 1:30 PM - 2:00 PM Salon M

Chairs: Yue Liu, Jack Koch, Terrence Tiersch

Development of efficient and reliable germplasm repositories is critical for preservation of genetic resources of aquatic model organisms that are vital to aquaculture, biomedical research, conservation, and wild fisheries. Community participation in establishment of sperm repositories is the most efficient strategy to ensure preservation and distribution of valuable lines. However, the most significant barrier in repository development is the lack of cryopreservation capability and reproducibility across the research community, posing great risks of losing advances developed from billions of research dollars.

The emergence of open hardware has fueled a new movement across biomedical research communities. With the increasing accessibility of consumer-level 3-D printers, open hardware devices for cryopreservation can be designed, and the files distributed to community members who can use them reliably freeze and evaluate samples in a standardized and reproducible way.

To assist utilization of these new technologies, the Aquatic Germplasm and Genetic Resources Center (www.aggrc.com) hosts a short (30-min) workshop that includes hands-on activities, demonstrations, interactions with 3-D printers, challenges, and interesting topics, such as 3-D printing, open hardware, open technology, cryopreservation, and genetic resources.

OYSTER INSURANCE OPTIONS FROM USDA RISK MANAGEMENT AGENCY

Tuesday, February 20 4:00 PM - 5:00 PM Salon B

Chair: Claire White

Overview of the USDA Risk Management Agency's role, current Federal Crop Insurance programs available for aquaculture, and possible future enhancements.

4:00 Claire White, Economist, Product Administration Branch, USDA Risk Management Agency
SHELLFISH CROP INSURANCE PROGRAM

4:45 Audience Q&A
Chandra Place, Chief, Product Administration Branch
Falan Goff, Risk Management Specialist, Product Administration Branch

TUESDAY

STATE MARINE AQUACULTURE COORDINATION NETWORK

Tuesday, February 20 1:30 PM - 5:00 PM Room 3

Chairs: Portia Sapp, Zach Harrison

- 1:30 Portia Sapp**, Director, Florida Division of Aquaculture, and Zach Harrison, Aquaculture Permits Coordinator, North Carolina Division of Marine Fisheries
STATE MARINE AQUACULTURE COORDINATION NETWORK OVERVIEW AND INVENTORY RESULTS
- 1:45 Russell Grice**, Aquaculture Business Specialist, Auburn University Shellfish Lab
SO YOU WANT TO BE AN OYSTER FARMER?
- 2:00 Stephanie Otts**, Director, National Sea Grant Law Center
INCREASING THE ACCESSIBILITY OF STATE MARINE AQUACULTURE POLICY DATA THROUGH THE DEVELOPMENT OF AN INTERACTIVE ONLINE DASHBOARD
- 2:15 Dr. Lindsay Glass Campbell**, Cultivated Oyster Mariculture Program Coordinator, Texas Parks and Wildlife Department
REAL WORLD APPLICATION OF SMACN POLICY DATABASE AND STATE INVENTORIES
- 2:30 Laura Butler**, Aquaculture Coordinator, Washington State Department of Agriculture
WASHINGTON'S SHELLFISH INTERAGENCY PERMITTING (SIP) TEAM
- 2:45 Speaker Panel**

FARMS, PUBLIC AND REGULATORY AGENCIES: EDUCATION, NEGOTIATION OR LITIGATION?

Tuesday, February 20 1:30 PM - 5:00 PM Salon A

Chair: Paul Zajicek

- 1:30 Greg A. Hibbard**, Attorney, Northwest Resource Law LLC
TACTICS EMPLOYED BY OPPONENTS OF AQUACULTURE: TWO RECENT CASE STUDIES
- 2:00 Emily Whitmore**, Social Science Research Manager, Maine Aquaculture Innovation Center
SOCIAL LICENSE STRATEGIES: HOW MAINE SHELLFISH AND SEAWEED FARMERS ARE WORKING TO GAIN COMMUNITY SUPPORT
- 2:15 Amy te Plate-Church**, Director of Sustainability, Center for Food Integrity
COMMUNITY ENGAGEMENT TO EARN PUBLIC TRUST

TUESDAY

- 2:45 Megan Sorby**, CEO, Pine Island Redfish
RAS MISINFORMATION CAMPAIGNS AND THE ROLE OF REGULATORY AGENCIES: EMPOWERING EDUCATION
- 3:00 Lindsey Feldman**, Joseph Shields, Laura Gray, Ellen Keane, Live for the Sea, LLC under contract for NOAA
Fisheries Southeast Regional Office
SET YOURSELF UP FOR SUCCESS FOR PERMIT REVIEW UNDER SECTION 7 OF THE ENDANGERED SPECIES ACT
- 3:15 Robert M. Smith**, Partner, K&L Gates
STRATEGIC CONSIDERATIONS IN NAVIGATING OPPOSITION IN THE PERMITTING PROCESS
- 4:15 Sebastian Belle**, Executive Director, Maine Aquaculture Association
KEYS TO EFFECTIVE ENGAGEMENT WITH REGULATORY AGENCIES: TALES FROM A RECOVERING REGULATOR
- 4:30 Douglas Steding**, Managing Partner, Northwest Resource Law LLC
FISH FARMING LITIGATION IN THE PACIFIC NORTHWEST: PERSPECTIVES FROM SIX YEARS OF LITIGATION

UNWANTED HITCHHIKERS IN AQUATIC ANIMAL SHIPMENTS

Tuesday, February 20 1:30 PM - 5:00 PM Salon C

Chairs: Michael Deshotel, Dave Straus

- 1:30 Clayton Myers**, USDA Office of Pest Management Policy, Washington, DC
OVERVIEW OF OPMP AND PESTICIDE REGULATORY INTERSECTIONS WITH AQUACULTURE
- 2:00 Elizabeth Rumley**, Sr. Staff Attorney, Nat'l Agricultural Law Center, Fayetteville, AR
AQUACULTURE AND THE LACEY ACT: IMPLICATIONS & CONSEQUENCES
- 3:00 Jon Amberg**, USGS, Lacrosse, WI
ADVANCING TOOLS TO CONTROL AQUATIC INVASIVE SPECIES
- 3:15 Jamie Anderson**, I.F. Anderson Farms Inc., Lonoke, AR
THE REAL TRUTH ABOUT AQUATIC HITCHHIKERS
- 3:30 Seth Summerside**, Keo Fish Farms, Inc., Keo, AR
HITCHHIKERS ARE LACY ACT VIOLATORS.
- 3:45 Jon Amberg** or Stephen Spear, USGS, Lacrosse, WI
ENVIRONMENTAL DNA: A TOOL WITH POTENTIAL TO MINIMIZE RISK OF INTRODUCTIONS.

DEVELOPING A NATIONAL FRAMEWORK FOR CONSERVING AND UTILIZING AQUATIC GENETIC RESOURCES TO ENHANCE RESILIENCY TO CLIMATE CHANGE

Tuesday, February 20 2:00 PM - 5:00 PM Salon M

Chairs: Terrence Tiersch, Yue Liu

USDA-NOAA-USFWS Inter-Agency Special Session, USAS 2024, San Antonio, Texas

The genetic resources of aquatic species are the fulcrum for adapting populations to environmental challenges. They represent billions of dollars of public and private-sector investment and are the foundation of our aquatic ecosystems. At present they are not well protected, especially in comparison with existing systems for safeguarding crop and livestock genetic resources. For example, decades of genetic improvement for aquaculture species are held as live populations that can be lost due to disease, accident, or natural disaster. Such risks are compounded by the uncertainty and problems presented by climate change with effects that will ripple throughout our economy, agricultural production systems, and natural ecosystems. As such, sole reliance on live populations is expensive and unnecessarily risky. Such problems have begun to be addressed in aquatic species, for example protection of more than 30,000 allelic lines of zebrafish for biomedical research at the NIH-funded Zebrafish International Resource Center, and thousands of aquatic samples at the USDA-ARS National Animal Germplasm Program.

However, this is an enormous problem that in many ways is beyond the resources of individual government agencies, thus requiring development of national programs and infrastructures. Based on this need, inter-agency discussions have begun to visualize a national framework for protection, distribution, and use of aquatic genetic resources among the Departments of Agriculture, Commerce, and Interior. Although these agencies address different missions and user communities, commonalities exist that can fuel strategic partnerships based on generalized approaches. For example, the same techniques, personnel, equipment, and facilities can be used to address inland aquaculture species (e.g., for USDA), marine fishery species (e.g., for NOAA), and imperiled and recreational sport species (e.g., for USFWS). These efforts are being compiled into a whitepaper implementation strategy that is the subject of this special session, to engage multiple commodity groups and solicit input on needs for establishing a functional infrastructure based on aquatic germplasm repositories. Such an infrastructure should accommodate collection, characterization, cryopreservation, storage, transport, and use of germplasm while incorporating aspects of intellectual property, biosecurity, health regulations, cultural significance, and international treaties or trade regulations.

The special session is intended to initiate high-level discussions and interactions to synthesize insights from government agencies, industry, academia, and other stakeholders. It is organized into three sessions. The first looks into national needs and challenges; the second includes interactive activities to facilitate creation of national strategies, and the third includes group discussion on germplasm utilization, funding opportunities, and a call to action.

TUESDAY

WEDNESDAY, February 21

IMPACTS AND OUTCOMES: USDA NIFA SUPPORT FOR U.S. AQUACULTURE

Wednesday, February 21 8:30 AM - 3:00 PM Room 3

Chair: Tim Sullivan

- 8:30 Tim Sullivan**, National Program Leader, Animal Health and Aquaculture, USDA NIFA, Kansas City MO (remote)
AN OVERVIEW OF USDA NIFA SUPPORT FOR US AQUACULTURE
- 8:45 Colby Johnson**, Evergreen Aquatics, LA Center WA
DEVELOPING THE FIRST BURBOT FINGERLING PRODUCTION FACILITY IN THE US. BY THE WAY, WHAT THE HECK IS A BURBOT ANYWAY?
- 9:00 Jennica Lowell Hawkins**, Ocean Era, Inc., Kailua-Kona, HI
PRECOCIOUS PUBERTY IN *Seriola rivoliana*: INDUCING EARLY MATURATION TO ACCELERATE SELECTIVE BREEDING PROGRAMS
- 9:15 Chatham Callam**, The University of Hawaii at Hilo, Hilo HI
YELLOW TANG *Zebrasoma flavescens* AQUACULTURE: GOING FROM LAB SCALE SUCCESS TO COMMERCIAL SCALE PRODUCTION IN HAWAII
- 9:30 Zachary Gordon**, The University of Connecticut and CT SeaGrant, Milford CT
REBOOTING THE NORTHEAST AQUACULTURE EXTENSION NETWORK (NAEN): A SKILLS, TRAINING, AND MENTORSHIP PROGRAM FOR EXTENSION PROFESSIONALS
- 9:45 Arun K. Dhar**, Aquaculture Pathology Laboratory, The University of Arizona, Tucson AZ
OVERCOMING CHALLENGES IN DISEASE FREE CERTIFICATION OF AQUAFEED AND FEED INGREDIENTS BY PCR
- 10:00 Shraddha Hedge**, Texas A&M University, College Station TX
QUANTIFICATION AND MANAGEMENT OF RISKS IN U.S. AQUACULTURE BUSINESSES
- 10:15 BREAK**
- 11:00 Mar Huertas**, Texas State University, San Marcos TX
DEVELOPMENT OF NASAL AND GUT PROBIOTICS TO PROTECT INTENSIVE CATFISH CULTURE AGAINST *Edwardsiella ictaluri* INFECTIONS

WEDNESDAY

- 11:15 Emily Churchman**, Auburn University, Auburn AL
EVALUATION OF *Flavobacterium cova*e PROTEIN VACCINES IN CHANNEL CATFISH *Ictalurus punctatus*
- 11:30 Peggy Biga**, The University of Alabama at Birmingham, Birmingham AL
DIETARY MATERNAL CHOLINE INTAKE ALTERS OFFSPRING DNA METHYLATION IN RAINBOW TROUT
- 11:45 Heather J. Hamlin**, The University of Maine, Orono ME
IDENTIFYING BIOMARKERS TO IMPROVE REPRODUCTIVE PERFORMANCE IN ATLANTIC SALMON *Salmo salar*
- 12:00 Marta Gomez-Chiarri**, The University of Rhode Island, Kingston RI
MOLECULAR MECHANISMS OF INTERSPECIES INTERACTIONS IN MITIGATING AQUACULTURE DISEASES
- 12:15 Michael Phelps**, Washington State University, Pullman WA
OVERCOMING CHALLENGES TO THE SUCCESSFUL APPLICATION OF GENOME EDITING TECHNOLOGY IN AQUACULTURE
- 12:30 Brandy E. Phipps**, Central State University, Wilberforce, OH
SUSHI: A USDA-NIFA SUSTAINABLE AGRICULTURE SYSTEMS PROJECT

USTFA TROUT FORUM

Wednesday, February 21 8:30 AM - 12:30 PM Salon D

Chair: Michael Lee

- 8:30 Wendy Sealey** - USDA/ARS/REE
FINDING ALTERNATIVE FEEDS FOR AQUACULTURE
- 8:45 Nora Hickey**, DVM - Washington Animal Disease Diagnostic Laboratory, Washington State University
BEST USE OF FISH HEALTH RESOURCES FOR TROUT FARMERS
- 9:00 Taylor Heckman**, Zeinab Yazdi, Caitlin Older, Matt Griffin, Geoffrey Waldbieser, Alexander Chow, Isabella Medina Silva, Kelsey Anenson, Julio García, Benjamin LaFrentz, Durda Slavic, Kathy Toohey-Kurth, Paula Yant, Heather Fritz, Eileen Henderson, Mark Adkison, Esteban Soto
SOMETHING'S FISHY! THE DIFFICULTIES OF DIAGNOSING PISCINE LACTOCOCCOSIS
- 9:15 Vivi Koletsi**, PhD – Alltech
MYCOTOXINS, A THREAT FOR TROUT PRODUCTIVITY AND HEALTH - HOW TO PROTECT YOUR INVESTMENT?

- 9:30 Danielle Florenzen** – Pacific Seafood
HOW TO WRITE A BIOSECURITY PLAN
- 9:45 Thomas Loch, PhD** - Aquatic Animal Health Laboratory, Michigan State University
ULTRAVIOLET LIGHT DIFFERENTIALLY REDUCES VIABILITY OF FISH- AND FISH FARM-ASSOCIATED FLAVOBACTERIA
- 10:00 BREAK**
- 11:00 Greg Wiens** - USDA/ARS/NCCCWA
EVALUATING POTENTIAL BIOMARKERS OF HEALTH AND DISEASE IN RAINBOW TROUT
- 11:15 Myron Kebus, MS, DVM** - Department of Pathobiology and Diagnostic Investigation, College of Veterinary Medicine, Michigan State University
VETERINARY AND VACCINE HELP FOR TROUT FARMERS IN THE NORTH CENTRAL STATES

ECONOMICS AND MARKETS - CONTINUED

Wednesday, February 21 8:30 AM - 10:00 AM Salon K

Chairs: Frank Asche, Ganesh Kumar, Atle Oglend

- 8:30 Adams Ceballos**, Frank Asche, Andrew Ropicki
THE IMPACT OF ECOLOGICAL DISTURBANCES ON LOW MOBILITY SEAFOOD INDUSTRIES: A STUDY OF STONE CRAB AND OYSTER AQUACULTURE IN THE FACE OF HARMFUL ALGAL BLOOMS
- 8:45 Anindita Mandal**, Ummum Tamim Dolon, Md. Akhtaruzzaman Khan, Md. Saidur Rahman, Pratheesh Omana Sudhakaran, Madan Mohan Dey
ASSESSING WOMEN'S INVOLVEMENT AND THEIR KNOWLEDGE, ATTITUDE AND PRACTICES (KAP) ON SAFE FISH PRODUCTION
- 9:00 Uttam Deb**, FMS Abdal
IMPACT OF TRADE RESTRICTIONS ON FISH AND FISHERY PRODUCTS TRADE BETWEEN THE UNITED STATES AND CHINA
- 9:15 Andrew Ropicki**
EXAMINING THE POTENTIAL BENEFITS OF RAS AQUACULTURE FOR U.S. PRODUCTION
- 9:30 Amy Shambach**, Kwamena Quagrainie, Stuart Carlton
DIRECT MARKETING AND SELLING FARM RAISED FISH TO CONSUMERS: INSIGHTS FROM CASE STUDY INTERVIEWS OF FARMERS
- 9:45 Tyler Firkus**, Bryce Wilberding, Emma Hauser
CAN PERCID AQUACULTURE BE PROFITABLE: AN ECONOMIC ANALYSIS AND BUDGETING TOOL FOR WALLEYE PRODUCERS

INNOVATIONS IN AQUACULTURE - NOVEL ECONOMIC PRACTICES

Wednesday, February 21 8:30 AM - 5:00 PM Room 16

Chair: Jessie Sanders

- 8:30 Jessica Fox**
GUT HEALTH AND WHY IT MATTERS: HOW TO FEED YOUR BOTTOM LINE
- 9:30 Hugh Mitchell**
WHAT AQUACULTURISTS CAN LEARN AND TAKE FROM TERRESTRIAL ANIMAL PRODUCTION
- 10:00 BREAK**
- 11:00 Tim Kniffen**
FACTORS INFLUENCING THE USE AND ECONOMIC RETURN OF ANTIMICROBIALS IN AQUATIC SPECIES
- 12:00 LUNCH**
- 1:30 Myron Kebus**
SURVEY OF SUPPLY AND DEMAND FOR FISH VETERINARY SPECIALISTS IN THE NORTH CENTRAL REGION OF THE U.S.
- 2:30 Chris Good**
HEALTH MANAGEMENT CONSIDERATIONS FOR LAND-BASED RAS SALMON PRODUCTION
- 3:00 BREAK**
- 3:30 Alicia Marston**
HOW DISEASE DETECTION IMPACTS INTERNATIONAL TRADE OF AQUATIC ANIMALS
- 4:00 Tim Kniffen**
HOW TO FILL OUT A VFD THAT WON'T BE REJECTED: STREAMLINE YOUR VFD MEDICATIONS

WEDNESDAY

TERRESTRIAL ANIMAL PROTEINS AND FATS FOR SUSTAINABLE AQUACULTURE PRODUCTION

Wednesday, February 21 8:30 AM - 12:30 PM Room 1

Chair: Charles Starkey

- 8:30 Bruno Araujo**, University of Mogi das Cruzes, Mogi das Cruzes, Sao Paulo, Brazil
FATTY ACID REQUIREMENTS OF AQUATIC ORGANISMS WITH EMPHASIS ON THE UTILIZATION OF FATS IN AQUACULTURE DIETS
- 9:15 Lou D'Abramo**, Mississippi State University (Emeritus), Starkville, MS, USA
FUTURE PRODUCTION OF SUSTAINABLE AQUAFEED IN RESPONSE TO COMPELLING FACTORS OF GLOBAL CLIMATE CHANGE AND FOOD SECURITY
- 10:00 BREAK**
- 11:00 Tere Viana**, Autonomous Univ. of Baja California, Ensanada, Baja California, MX
THE USE OF BOVINE AND PORCINE MEAT AND BONE MEALS IN AQUACULTURE
- 11:45 Charles Starkey**, VP Scientific and Regulatory Affairs, NARA, Auburn, AL, USA
SUSTAINABLE CONTRIBUTION OF AMINO ACIDS FROM ANIMAL PROTEINS VS. MARINE PROTEINS FOR LIVESTOCK

WEDNESDAY

AQUAPONICS

Wednesday, February 21 8:30 AM - 12:30 PM Salon L

Chair: Huy Tran

- 8:30 Shima Rezaei**, Brendan Higgins, David Cline
ILLUMINATION AND SYSTEM DECOUPLING: THE IMPACT ON NUTRIENT DYNAMICS AND PRODUCT YIELD IN AQUAPONICS
- 8:45 Margaret Lawrence**, Barbara Evans
GROWTH RATE OF EASTERN WHITE CEDAR IN AQUAPONICS VERSUS SOIL
- 9:00 Hannah Knuckles**, Rebecca Lochmann, Amit Sinha, Carl Webster, Dayan Perera
A COMPARATIVE STUDY OF OKRA *Abelmoschus esculentus* GROWN IN FLOODED MEDIA BEDS AND DEEP WATER CULTURE AQUAPONICS SYSTEMS: AND THE EFFECT OF PLANT DENSITY ON GROWTH AND PERFORMANCE

- 9:15 Uthpala Padeniya**, Dorcas Lukwesa, Allen Davis, Daniel Wells, Timothy Bruce
EVALUATING THE INFLUENCE OF DIETARY IMMUNOSTIMULANTS ON GROWTH IN NILE TILAPIA *Oreochromis niloticus* AND ROMAINE LETTUCE *Lactuca sativa* IN A BIOFLOC-INTEGRATED AQUAPONICS SYSTEM
- 9:30 Rebecca Dupre**, Wayne Roussel, Brennan Smith
INVESTIGATING PRACTICAL STRATEGIES FOR POST-HARVEST REMOVAL OF OFF-FLAVORS IN FARMED FISH
- 9:45 Javier Ubilla**, Leo Fleckenstein, J. Chris Ward, Janelle Hager
IMPACT OF VARIED DROUGHT PERIODS ON CAPSAICIN CONCENTRATION IN EARLY JALAPEÑO *Capsicum annuum*, cv. EARLY JALAPEÑO GROWN IN AQUAPONIC SYSTEMS
- 10:00 BREAK**
- 11:00 Aya Hussain**, Paul Brown
A LITERATURE REVIEW OF TILAPIA/ LETTUCE AQUAPONICS – PRODUCTION STATUS, VARIETIES, AND RESEARCH GAPS
- 11:15 Pedram Hosseinzadehnamadi**, Caleb L. Gryder, Yue Liu, Terrence R. Tiersch
AN OPEN-HARDWARE APPROACH FOR REAL-TIME ELECTRICAL SENSING OF VITRIFICATION TO SUPPORT GERMPLASM REPOSITORY DEVELOPMENT FOR AQUATIC SPECIES
- 11:30 Jemuel Doctolero**, Timothy Rice, Aya Hussain, Paul Brown
IDENTIFYING OPTIMAL THERMAL REGIME FOR RAISING NILE TILAPIA AND LETTUCE IN AN AQUAPONIC SYSTEM
- 11:45 Gabriel C. Smith**, R. Charlie Shultz, Pedro Casas
EXAMINATION OF GREENHOUSE WATER EFFICIENCY USING SMART-WATER TECHNOLOGY AT SANTA FE COMMUNITY COLLEGE

AQUACULTURE EDUCATION, EXTENSION, AND TECHNOLOGY TRANSFER

Wednesday, February 21 8:30 AM - 5:00 PM Salon C

Chairs: Forrest Wynne, David Cline

- 8:30 Christian Brayden**
BEST MANAGEMENT PRACTICES (BMPS) FOR OYSTER AQUACULTURE IN MAINE
- 8:45 Carissa Maurin, Christian Brayden, Kate Howell**
MAINE SHELLFISH AND SEAWEED AQUACULTURE APPRENTICESHIP:
A PARTNERSHIP BETWEEN INDUSTRY AND THE COMMUNITY COLLEGE SYSTEM
- 9:00 Andrea Tarnecki, Russell Grice**
THE COMMERCIAL OYSTER AQUACULTURE SECTOR TRAINING (COAST) PROGRAM
- 9:15 Joshua Dusci**
SHORT- AND LONG-TERM AQUAPONIC PROGRAMMING AT VIRGINIA STATE UNIVERSITY
- 9:30 Herbert E. Quintero**
CHALLENGES AND OPPORTUNITIES FOR CONTINUE DEVELOPING THE AQUACULTURE EXTENSION PROGRAM AT THE OHIO STATE UNIVERSITY
- 9:45 Amy Schrank, Barbara Evans, Elliot Nelson, Lauren Jescovitch, Kieran Smith, Donald Schreiner**
DEVELOPING AN AQUACULTURE LITERATE PUBLIC THROUGH YOUTH AND ADULT ENGAGEMENT
- 10:00 BREAK**
- 11:00 Nicole Wright, Lauren Jescovitch, Sharon Moen, Amy Schambach, Amy Schrank, Hannah Cullen, Geneva Langeland**
ON THE MAP: LEARNING THE IMPACTS OF THE GREAT LAKES FRESH FISH FINDER ON FISH PRODUCING BUSINESSES
- 11:15 Lauren N. Jescovitch**
MI FRESH FISH: A FISHERIES' CONSUMER EDUCATION MARKETING CAMPAIGN
- 11:30 Stephanie Otts, Catherine Janasie**
ADDRESSING THE NEEDS OF AQUACULTURE COMMUNITY THROUGH LEGAL RESEARCH AND EXTENSION

WEDNESDAY

- 11:45 Barry Udelson**
GREAT LAKES AQUACULTURE DECISION MAKER'S DAY: AN EVENT BRINGING STATE LEGISLATORS TO MEET WITH AQUACULTURE FARMERS AND TOUR A FARM
- 12:00 Myron Kebus, Nisha Shrestha, Matthew Smith, Nicholas Phelps, Thomas Loch**
VETERINARY AQUACULTURE OUTREACH IN THE NORTH CENTRAL REGION OF THE USA
- 12:15 Catherine Frederick**
AQUACULTURE EXTENSION IN MARYLAND: ASSESSING COMMUNITY KNOWLEDGE, ATTITUDES, AND PERCEPTIONS TOWARDS LAND-BASED RECIRCULATING AQUACULTURE SYSTEMS (RAS)
- 12:30 LUNCH**
- 1:30 Hayley R. Lemoine, Adriane K. Michaelis, Matthew McPherson, Sarah E. Lester**
EXAMINING THE SOCIAL ACCEPTABILITY OF AQUACULTURE ON FLORIDA'S GULF COAST
- 1:45 James Currie, Alicia Bishop**
NOAA FISHERIES ALASKA AQUACULTURE PROGRAM 2023: COMMUNICATING SCIENCE AND POLICY TO BROAD AUDIENCES
- 2:00 M. Scarlett Tudor, Carla Scocchi, Melissa Malmstedt, Katarina Minas, Xander LaComb**
INCREASING ACCESSIBILITY TO INNOVATIONS IN AQUACULTURE TECHNOLOGY AND EDUCATION THROUGH VIRTUAL TOURS
- 2:15 Roberto Cardenas, Di Fang, Frank Asche**
PROMOTING HEALTHIER DIETS: ANALYZING THE EFFECTS OF SEAFOOD INCLUSION IN THE WIC PROGRAM
- 2:30 Kenneth Thompson, Carl Webster, Kirk Pomper**
INTEGRATING AQUACULTURE IN AND OUTSIDE THE CLASSROOM THAT SUPPORTS STEM EDUCATION
- 2:45 Elliot Nelson, Barbara Evans**
DEVELOPING AN AQUACULTURE WORKFORCE PATHWAY: PRE-K TO POST SECONDARY
- 3:00 BREAK**
- 3:30 Md. Emran Hossain, Madan Mohan Dey, Md. Akhtaruzzaman Khan**
YOUTH ENGAGEMENT IN AQUACULTURE DEVELOPMENT: THE ROLE OF FARMER'S AGE ON AQUACULTURE PRODUCTIVITY, PERFORMANCE, AND EFFICIENCY

- 3:45 Forrest Wynne, Dana Morse**
2022 NATIONAL AQUACULTURE EXTENSION CONFERENCE PARTICIPANT EVALUATION RESULTS
- 4:00 Rebecca Ransom, Natalie Houston, Gary Martin, Alexe Dacurro, Cheryl Dieter, Rich Niswonger, Jana Stewart**
THE U.S. GEOLOGICAL SURVEY (USGS) NATIONAL WATER AVAILABILITY AND USE ASSESSMENT PROGRAM: ESTIMATING AQUACULTURE WATER USE
- 4:15 Gabriel Smith, R. Charlie Shultz, Pedro Casas**
EXAMINATION OF GREENHOUSE WATER EFFICIENCY USING SMART-WATER TECHNOLOGY AT SANTA FE COMMUNITY COLLEGE

FEDERAL AQUACULTURE ENFORCEMENT IN THE EEZ

Wednesday, February 21 8:30 AM - 12:30 PM Room 21

Chair: Brian Fredeu

During this session, federal agencies will provide an overview of their current authorities and how those may relate to offshore farms to mutually inform the agencies and marine aquaculture community. Leadership of the National Aquaculture Association (NAA) has conveyed concerns about a lack of understanding of the multiplicity of enforcement agencies. Federal agencies are looking to better understand these concerns and provide clarification on the extent and limits to their enforcement authorities as it may pertain to offshore aquaculture operations in the EEZ.

- 8:30 Kip Tyler, EPA**
GENERAL OVERVIEW OF PERMIT REQUIREMENTS IN AN EPA CLEAN WATER ACT PERMIT FOR OFFSHORE AQUACULTURE
- 8:45 Jacob Siegrist, U.S. Army Corps of Engineers**
GENERAL OVERVIEW OF U.S. ARMY CORPS OF ENGINEERS REGULATORY PROGRAM AUTHORITIES FOR OFFSHORE AQUACULTURE
- 9:00 EPA & U.S. Army Corps of Engineers**
ENFORCEMENT AND COMPLIANCE APPROACHES RELATED TO EPA CLEAN WATER ACT AND RIVERS AND U.S. ARMY CORPS OF ENGINEERS REGULATORY PROGRAM PERMITS FOR OFFSHORE AQUACULTURE
- 9:30 Bryan Landry, NOAA Fisheries; Kathleen Hartman, USDA APHIS**
GENERAL OVERVIEW OF ENFORCEMENT OF OTHER FEDERAL AUTHORITIES RELATED TO AQUACULTURE OPERATIONS
- 10:00 BREAK**
- 11:00 Open Panel Q&A**
U.S. Army Corps of Engineers, EPA

WEDNESDAY

ECOLOGY - ENVIRONMENT

Wednesday, February 21 8:30 AM - 12:30 PM Salon B

Chair: Aaron Pilnick

- 8:30** **Johannie Duhaime**, Anaïs Lacoursière-Roussel, Brittany Beauchamp
OVERVIEW OF CANADA'S AQUACULTURE MONITORING PROGRAM
- 8:45** **Benjamin Young**, Ali AL Shaikhi
SUSTAINABILITY ASSESSMENT OF COASTAL FISH HATCHERIES IN SAUDI ARABIA
- 9:00** **Aaron Switzer**
CREATIVE SOLUTIONS TO RISING ENERGY COSTS WHILE DRIVING FACILITIES TOWARDS ENERGY EFFICIENCY
- 9:15** **Paul Stowe**
KEEPING YOUR POOP IN A GROUP: IMPROVING FISH HATCHERY EFFLUENT
- 9:30** **Abhinav Choudhury**, Christine Lepine, Christopher Good
MICROBIOLOGY AS A TOOL FOR COMPLEMENTING STUDIES ON ANAEROBIC DIGESTION OF WASTE SOLIDS FROM RECIRCULATING AQUACULTURE SYSTEMS
- 9:45** **Magaleate Kostelnik**, Bing Ouyang, Paul Wills, Sahar Mejri
ENVIRONMENTAL HYPOXIA IN ECOLOGICALLY IMPORTANT ESTUARIES AND ITS EFFECTS ON NATIVE FISH SPECIES DURING EARLY DEVELOPMENT
- 10:00** **BREAK**
- 11:00** **Saltuk Buğrahan Ceyhun**
GLOBAL WARMING AND NANOPLASTIC TOXICITY
- 11:15** **Rasaq Adewale Olowu**, Medina Osundiya, Olawale Osifeko, Oluwakemi Tovide, Tohib Oyewole, AbdulAzeez Jimoh, Chinoyedua Onwordi, Bilikis Ajofoyinbo, Opeyemi Avoseh, Ayofe Hammed
BIOACCUMULATION OF POTENTIALLY TOXIC METALS IN WATER, SEDIMENTS, SILVER CATFISH *Chrysichthys nigrodifitatus* AND TILAPIA *Tilapia zillii* HARVESTED FROM MAJIDUN AND IGBEDE RIVERS, LAGOS STATE NIGERIA
- 11:30** **A. Townsend Peterson**, Claudia Nuñez-Penichet, Christine Ellis
GLOBAL ECOLOGY AND DISTRIBUTIONAL POTENTIAL OF TWO OYSTER AQUACULTURE PESTS: OSHV-1 AND *Perkinsus marinus*

WEDNESDAY

- 11:45 Krystal M. Boley**, Amalia M. Harrington, M. Scarlett Tudor, Heather J. Hamlin
SUBLETHAL EFFECTS OF LOW-DOSE EXPOSURE TO IMIDACLOPRID ON
SUBADULT FEMALE AMERICAN LOBSTERS *Homarus americanus*

SHELLFISH

Wednesday, February 21 8:30 AM - 5:00 PM Salon M

Chairs: Matthew Gray, Bill Walton

- 8:30 Sarah Bodenstein**, Sarah Waguespack, Elizabeth Robinson
EVALUATING MICROALGAE PRODUCTION AND RESOURCE PARTITIONING
IN AN OYSTER HATCHERY
- 8:45 Jessica Small**, Klara Verbyla, Peter Kube, Stan Allen
EARLY STAGES OF IMPLEMENTATION OF GENOMIC SELECTION IN THE
EASTERN OYSTER *Crassostrea virginica* IN A MID-ATLANTIC BREEDING
PROGRAM
- 9:00 Ming Liu**, Brittany Wolfe-Bryant, Jon Farrington, Leigh Wolfe-Bryant, Shivish
Bhandari, Scott Knoche
DEVELOPMENT OF GENETIC BREEDING TO IMPROVE THE EASTERN
OYSTERS' GROWTH AND SURVIVAL IN MARYLAND LOW-SALINITY WATERS
- 9:15 Heather King**, Eric Saillant, William Walton, Huiping Yang, Leslie Sturmer,
Christopher Hollenbeck, Brian Callam, Jim Stoeckel, Scott Rikard, Megan Gima,
Jasson Stannard, Kelly Lucas, Andrea Tarnecki
GENETIC PARAMETERS FOR GROWTH TRAITS IN GULF OF MEXICO
EASTERN OYSTER FAMILIES REARED IN HIGH AND LOW SALINITY
ENVIRONMENTS
- 9:30 Heather King**, Huipang Yang, Leslie Sturmer, Christopher Hollenbeck,
John Scarpa, Jim Stoeckel, Scott Rikard, Megan Gima, Jason Stannard,
Kelly Lucas, Brynna Buckmaster, Sumi Akter, Andrea Tarnecki, Eric Saillant
SELECTION RESPONSE OF GULF OF MEXICO EASTERN OYSTER
Crassostrea virginica BRED FOR PERFORMANCE IN LOW SALINITY
ENVIRONMENTS
- 9:45 Jasmine Hall**, Megan Gima, Xinping Hu, Reg Blaylock
OPTIMIZATION OF WATER QUALITY PARAMETERS FOR SURVIVAL AND
GROWTH OF EASTERN OYSTER *Crassostrea virginica* LARVAE IN CULTURE
- 10:00 BREAK**
- 11:00 Ashton Schardt**, Kasondra Miller, Monte McGregor, Waldemar Rossi
EVALUATING COMMERCIAL DIETS FOR THE PRODUCTION OF JUVENILE
FRESHWATER PLAIN POCKETBOOK MUSSELS *Lampsilis cardium*

- 11:15 Bernarda Calla**, Jingwei Song, Neil Thompson
INVESTIGATING SEX DETERMINATION AND DIFFERENTIATION IN PACIFIC OYSTERS *Crassostrea gigas*: NEW APPROACHES AND APPLICATIONS
- 11:30 Julianne Grenn**, William Walton
CULTURE PRACTICES AFFECTING WATER PARAMETERS INSIDE OYSTER GROW-OUT CONTAINERS ON COMMERCIAL SHELLFISH AQUACULTURE OPERATIONS
- 11:45 Emily Andrade**, Tahera Attarwala, Juan Ramos, Ali Parsaeimehr, Gulnihal Ozbay
ECOLOGICAL ASSESSMENT OF ENVIRONMENTAL HEALTH AND OYSTER AQUACULTURE GROW-OUT CONDITIONS IN REHOBOTH BAY, DELAWARE
- 12:00 Ralf Klis**, Tarei King, Gregor Jamieson, Eitan Sessler
ENHANCING AQUACULTURE OPERATIONS THROUGH DATA-DRIVEN DECISION-MAKING – THE ROLE OF STARTUPS IN ADDRESSING AQUACULTURE’S PRESENT AND FUTURE CHALLENGES
- 12:15 Michael Coogan**, Michael Chambers, David W. Fredriksson, Michael Doherty, Erich Berghahn
OFFSHORE BOTTOM CULTURE OF SEA SCALLOPS IN THE GULF OF MAINE: A BIOLOGICAL AND ECONOMIC FEASIBILITY ANALYSIS
- 12:30 LUNCH**
- 1:30 Darien D. Mizuta**, William C. Walton
INVESTIGATIONS ON THE SUPPORTING SCENARIO FOR SMALL-SCALE SHELLFISH AQUACULTURE AND ITS CONTRIBUTION TO FOOD SECURITY IN THE USA
- 1:45 Robert J. Holmberg**, Rachael Smith, Hannah Zuklie, Cassandra Root, Reena John, Maylee Sun, Brian Beal
SOFTSHELL CLAM *Mya arenaria* SURVIVAL, SHELL MORPHOMETRICS, AND SUSCEPTIBILITY TO PREDATION IN RESPONSE TO SIMULATED OCEAN ACIDIFICATION AND WARMING
- 2:00 Giuseppe Esposito**, Silvia Colussi, Domenico Meloni, Paolo Pastorino, Benedetto Sicuro, Marino Prearo
SHELLFISH AQUACULTURE: TRENDS AND CHALLENGES FOCUSED ON MEDITERRANEAN BASIN
- 2:15 Kelvin Ofori**, Ali Parsaeimehr, Gulnihal Ozbay
INVESTIGATION OF THE MICROBIAL SAFETY OF EASTERN OYSTERS *Crassostrea virginica* FROM SALLY COVE IN REHOBOTH BAY, DELAWARE

- 2:30 Luke Matvey**, Andrea Tarnecki, Scott Rikard
Campylobacter, SEABIRDS, AND OFF-BOTTOM OYSTER AQUACULTURE
- 2:45 Roberto Cruz-Flores**, Teresita Del Carmen Guarneros Martínez,
 Jorge Cáceres-Martínez, Antonio López-Carvalho, Miguel Ángel Del Río-Portilla,
 Yanet Guerrero Rentería
 RICKETTSIALES-LIKE ORGANISM IN CULTURED PLEASURE OYSTER
Crassostrea corteziensis FROM MÉXICO, PREVALENCE AND INTENSITY
- 3:30 Gary Fleener**, Maxwell Rintoul, Justin Mojonier, Austin Maguire
 SCIENCE ON THE FARM: HARNESSING BASIC FIELD RESEARCH METHODS
 TO IMPROVE OYSTER FARM MANAGEMENT
- 3:45 Matthew LaGanke**, William Walton
 ASSESSING THE EFFECTS OF HUSBANDRY DECISIONS ON MORTALITY,
 GROWTH, AND TIME-TO-MARKET IN OFF-BOTTOM OYSTER AQUACULTURE
- 4:00 Kevin Johnson**, Neil Thompson
 FIELD TRIALS OF MIDORI AND MYAGI PACIFIC OYSTER LINEAGES IN 4
 ESTUARIES ALONG THE CALIFORNIA CURRENT
- 4:15 Barry Udelson**, Matthew Sclafani
 SETBACKS AND PROGRESS IN CULTIVATING RIBBED MUSSEL *Geukensia*
demissa

CRUSTACEAN PRODUCTION

Wednesday, February 21 8:30 AM - 5:00 PM Salon J

Chairs: Melanie Rhodes, Allen Davis

- 8:30 Andrew Ray**, Mara Merlino
 A SURVEY-BASED APPROACH TO CHARACTERIZING THE U.S. SHRIMP
 FARMING INDUSTRY
- 8:45 Sheikh Aftab Uddin**, Khandker Jamila Afrose Jui, Md. Sabbirul Islam
 SHRIMP AQUACULTURE IN BANGLADESH: CURRENT TREND AND FUTURE
 PROSPECTS
- 9:00 John M. Boyle**, Maurice Kemp, William G. Decker
 SUSTAINABLE HARVEST: FARMING PACIFIC WHITELEG SHRIMP
Litopenaeus vannamei WITH HIGH BIOMASS LOADING UNDER
 SUPERSATURATED DISSOLVED OXYGEN LEVELS
- 9:15 Peter Van Wyk**, Craig L. Browdy
 ARE HIGH-QUALITY FEEDS STILL A GOOD VALUE IN AN ERA OF
 HISTORICALLY LOW SHRIMP PRICES?

- 9:30 Adela Araujo**, Christian San Andres, Khanh Nguyen, Trenton Corby, Melanie Rhodes, Julio Garcia, Luke Roy, Allen Davis
THE RELATION BETWEEN AUTOMATIC AERATION RATE AND EXPECTED DISSOLVED OXYGEN ON PACIFIC WHITE SHRIMP *Litopenaeus vannamei* SEMI-INTENSIVE OUTDOOR POND PRODUCTION
- 9:45 Magida Tabbara**, Leila Strelbel, Silvio Peixoto, Roberta Soares, Sofia Morais, D. Allen Davis
USE OF PASSIVE ACOUSTIC MONITORING TO EVALUATE THE EFFECTS OF A FEED EFFECTOR ON FEEDING BEHAVIOR, GROWTH PERFORMANCE, AND SALINITY STRESS TOLERANCE OF *Litopenaeus vannamei*?
- 10:00 BREAK**
- 11:00 Cristhian San Andres**, Adela Araujo, Allen Davis, Khanh Nguyen, Trent Corby, Melanie Rhodes, Luke Roy, Julio Garcia
THE EFFECTS OF LOW DISSOLVED OXYGEN IN GREENWATER SYSTEMS OF THE PACIFIC WHITE SHRIMP *Litopenaeus vannamei*?
- 11:15 Dustin Moss**, John Buchanan, Klara Verbyla, Alejandro Gutierrez, Peter Kube, Jeffrey Prochaska, Corrie Wong
IMPROVING LOW SALINITY PERFORMANCE OF PACIFIC WHITE SHRIMP *Litopenaeus vannamei* USING A GENOMIC APPROACH
- 11:30 Otávio Augusto Pimentel**, Wilson Wasielesky Jr., Luis Henrique Poersch, Dariano Krummenauer
USE OF DIFFERENT FERTILIZATION STRATEGIES FOR THE SYMBIOTIC SYSTEM ON WATER QUALITY, MICROBIAL COMPOSITION AND GROWTH OF *Penaeus vannamei* IN THE NURSERY PHASE
- 11:45 Otávio Augusto Pimentel**, Valdemir de Oliveira, Rildo José de Andrade, Carlos Yure de Oliveira, Elizabeth dos Santos, Alitene Pereira, Luis Otavio Brito, Alfredo Gálvez
PLANKTON COMMUNITY IN *Penaeus vannamei* NURSERIES WITH SYMBIOTIC SYSTEM UNDER DIFFERENT FREQUENCIES OF ADJUSTMENT ON Ca:Mg:K RATIO IN LOW SALINITY WATER
- 12:00 Shrijan Bajracharya**, Julio García, Allen Davis, Luke Roy
THE EFFECTS OF STOCKING DENSITY ON GROWTH OF JUVENILE PACIFIC WHITE SHRIMP *Litopenaeus vannamei* IN A MIXOTROPHIC WATER SYSTEM
- 12:15 Bianca De Oliveira Ramiro**, Wilson Wasielesky Jr., Otávio Augusto L.F. Pimentel, Taozhu Sun, Ethan McAlhane, Stephen Urick, Jonathan van Senten, Michael H. Schwarz, Dariano Krummenauer
EVALUATION OF ZOOTECHNICAL PERFORMANCE AND WATER QUALITY OF SHRIMP *Penaeus vannamei* IN BIOFLOC TECHNOLOGY SYSTEM AND RECIRCULATING AQUACULTURE SYSTEMS

12:30 LUNCH

- 1:30 Dariano Krummenauer**, Wellica G. Reis, Luis Poersch, José Maria Monserrat, Hellyjúnyor Brandão, Wilson Wasielesky Jr.
USE OF DIFFERENT PHOTOPERIODS OF ARTIFICIAL GREEN LIGHTING (LED) IN BIOFLOC SYSTEM ON THE GROWTH AND OXIDATIVE STRESS OF *Penaeus vannamei*
- 1:45 Shrijan Bajracharya**, Julio García, Allen Davis, Luke Roy
THE EFFECTS OF DIFFERENT FEED SIZES ON THE GROWTH OF PACIFIC WHITE SHRIMP *Litopenaeus vannamei* IN A BIOFLOC SYSTEM
- 2:00 Oluwafemi Adebayo**, Kasondra Miller, Pedro Carvalho, Fernando Yamamoto, Jeffery Tomberlin, Delbert Gatlin III, Waldemar Rossi
BLACK SOLDIER FLY LARVAE MEAL IN PRACTICAL DIETS FOR PACIFIC WHITE SHRIMP *Litopenaeus vannamei*: AN ASSESSMENT OF RESPONSES TO LAURIC ACID
- 2:15 James T. Tuttle**, Timothy J. Bruce, Luke A. Roy, Hisham A. Abdelrahman, Julio C. García, Benjamin H. Beck, Anita M. Kelly
EVALUATION OF VARIOUS CONCENTRATIONS OF A PROTEASE COMPLEX FEED ADDITIVE IN LOW-SALINITY CULTURE OF *Litopenaeus vannamei*
- 2:30 Susana Frías Gómez**, L. Héctor Hernández H., C. Alfonso Álvarez G., Madison S. Powell
MACRONUTRIENT INTAKE EFFECTS ON GENE EXPRESSION OF ANTIOXIDANT AND METABOLISM RELATED GENES IN FRESHWATER PRAWN *Macrobrachium acanthurus*
- 2:45 Leong-Seng Lim**, Kit-Shing Liew
RESPONSES OF PURPLE MUD CRAB *Scylla tranquebarica* TO VARIOUS SACCHARIDE SOLUTIONS AND THE SACCHARIDE-COATED PELLETTED FEEDS
- 3:00 Juan Ramos**, Tahera Attarwala, Emily Andrade, Ali Parsaeimehr, Gulnihal Ozbay
POPULATION CHARACTERISTICS ASSESSMENT ON BLUE CRABS *Callinectes sapidus* AND VIRUS IDENTIFICATION OF *Callinectes sapidus* REOVIRUS 1 (CSRV1) USING PCR ANALYSIS IN DELAWARE INLAND BAYS
- 3:15 Mediha Yildirim-Aksoy**, Burak Aksoy, Benjamin Beck
NOVEL SOYHULL FEED BINDER -EFFECTS ON WATER STABILITY, NUTRIENT LEACHING AND POTENTIAL HEALTH BENEFITS ON PACIFIC WHITE SHRIMP *Litopenaeus vannamei*

SEA GRANT'S RESPONSE TO THE PANDEMIC - SHELLFISH RESTORATION AND AQUACULTURE MARKETING STRATEGIES

Wednesday, February 21 8:30 AM - 12:30 PM Salon A

Chairs: Charles Weirich, Mark Rath

- 8:30 Kwamena Quagrainie**, Jingjing (Tina) Tao, Taylor Bradford
COMPARATIVE CASE STUDY OF SMALL-SCALE FISH PROCESSING FOR LOCAL SEAFOOD SUPPLY
- 8:45 Michael Ciaramella**
EXPLORING OPPORTUNITIES TO ENHANCE THE PROCESSING AND MARKETING OF AQUATIC FOODS
- 9:00 Sharon Moen**
PANDEMIC PERSPECTIVES ON FISH FARMING AND FISH EATING FROM AMERICA'S DAIRYLAND
- 9:15 Joshua Reitsma**, Abigail Archer, Harriet Booth
CHALLENGES AND NEW OPPORTUNITIES FOR MASSACHUSETTS SHELLFISH GROWERS DURING THE PANDEMIC
- 9:30 Rob Hudson**, Azure Cygler, Jennifer McCann
RHODE ISLAND SEA GRANT'S EFFORTS TO SUPPORT AND INFORM THE SEAFOOD SECTOR DURING THE PANDEMIC
- 9:45 Russell Grice**, LaDon Swann
CONCERNED OYSTERMEN RESTORING ESTUARIES
- 10:00 BREAK**
- 11:00 Pete Rowe**, Lisa Calvo, Michael De Luca, Daphne Munroe, Russ Babb, Jeff Normant, Scott Steuber, Steve Evert, Christine Thompson
NEW JERSEY SHELLFISH AQUACULTURE EXCHANGE – A CROSS-CUTTING APPROACH TO HABITAT RESTORATION AND RESILIENCY
- 11:15 Tessa Getchis**, David Carey, Alissa Dragan, Sylvain De Guise, Michael Gilman
ENSURING THE FUTURE VIABILITY OF CONNECTICUT OYSTERS AND OYSTER FARMS
- 11:30 Steve Jones**, Ray Grizzle, Krystin Ward, Alex Gross
OYSTER ENHANCEMENT FOR NEW HAMPSHIRE OYSTER GROWERS AND ESTUARIES

WEDNESDAY

11:45 Ed Hale, Dennis McIntosh, Edward Lewandowski, Mark Jolly-Van Bodegraven, Christopher Petrone, Kathryn J. Coyne
ASSISTING THE AQUACULTURE AND TOURISM INDUSTRIES OF DELAWARE THROUGH A GLOBAL PANDEMIC

FACILITIES SHOWCASE

Wednesday, February 21 8:30 AM - 10:00 AM Room 20

Chairs: Caeley Flowers, Piper Flowers

- 8:30 Jesse T. Trushenski**
FACILITY SHOWCASE: THE RIVERENCE GROUP
- 8:45 Patrick Rice**, Caeley Flowers
FACILITIES SHOWCASE: PROFESSIONAL OPPORTUNITIES AT THE COLLEGE OF THE FLORIDA KEYS FOR UNDERGRADUATE STUDENTS
- 9:00 Matthew A. DiMaggio**
FACILITIES SHOWCASE: THE UNIVERSITY OF FLORIDA'S TROPICAL AQUACULTURE LABORATORY
- 9:15 Omolola Betiku**, Keawin Sarjeant, Stephen Leong, James Neil, Vonda Richardson, Garlen Wesson
AQUACULTURE RESEARCH AND OPPORTUNITIES AT FLORIDA A&M UNIVERSITY
- 9:30 Emma Hauser**, Chris Hartleb, Tyler Firkus
RESEARCH AND DEMONSTRATION CAPABILITIES AT STATE-OF-THE-ART FACILITY ENABLE HIGHLY UNIQUE AQUACULTURE EDUCATION AND TRAINING PROGRAM
- 9:45 Imani Black**
MINORITIES IN AQUACULTURE: WORKFORCE DEVELOPMENT AND CAREER OPPORTUNITIES

WEDNESDAY

PRODUCTION TOPICS CONTRIBUTED SESSION

Wednesday, February 21 11:00 AM - 12:30 PM Room 20

Chair: Omolola Betiku

- 11:00 Vasu Jayaprakas**
FEED TECHNOLOGY AND NUTRITION ON BROODSTOCK DEVELOPMENT
AND BREEDING OF AQUACULTURE SPECIES
- 11:15 Donna Phaneuf**, Scott Campbell
MEASURES OF MATTER FOR MARINE LIFE – ARCHITECTURE
SUPPORTING AQUACULTURE RESEARCH LABORATORIES, AQUACULTURE
TANK FARMS, AQUARIUM ROOMS
- 11:30 Shelby Walker**, Shawn McNulty, Ian A.E. Butts, Anita Kelly, Taryn Garlock,
Hisham Abdelrahman, Larry Lawson, Luke Roy
PRODUCTION OF LARGEMOUTH BASS *Micropterus salmoides* STOCKERS
FOR FOOD FISH PRODUCTION USING COMMERCIAL SPLIT-POND
SYSTEMS
- 11:45 Lilian Elekwachi**, Michael Tlusty
DEVELOPING A HYBRID FISH SMOKING TECHNOLOGY

WEDNESDAY

MARINE PROTECTED RESOURCES RISK MITIGATION TECHNIQUES

Wednesday, February 21 11:00 AM - 12:30 PM Salon K

Chair: Kevin Madley

- 11:00 Laura Gray**, Lindsey Feldman, Joe Shields
WHAT NOAA FISHERIES IS DOING TO MANAGE THE POTENTIAL RISKS OF
AQUACULTURE ACTIVITIES ON PROTECTED RESOURCES
- 11:15 Eric Musgrave**, Mark Dion
OCEAN POWER TECHNOLOGIES: REAL-TIME, PASSIVE ACOUSTIC
MONITORING (PAM) SYSTEM
- 11:30 Tori Spence**, Stacie Robinson, Lesley Hawn, Angela Amlin, Haley Durbin,
Kristina Dauterman
UNDERSTANDING INTERACTIONS WITH ENDANGERED MARINE MAMMALS
AND TROPICAL AQUACULTURE

INTEGRATED MULTI-TROPHIC AQUACULTURE

Wednesday, February 21 1:30 PM - 5:00 PM Salon B

Chairs: Melanie Rhodes, Allen Davis

- 1:30 David Fredriksson**, Michael Coogan, Michael Chambers, Longhuan Zhu, Michael Doherty
INSTRUMENTATION AND FIELD SAMPLING TO QUANTIFY INTEGRATED MULTI-TROPHIC AQUACULTURE ENVIRONMENTAL INTERACTIONS
- 1:45 Elizabeth Martin**, Michael Chambers, Michael Coogan, Michael Doherty, David Fredriksson, Christopher Neefus
ASSESSING THE CAPACITY OF RED ALGAE *Gracilaria vermiculophylla* AND AMERICAN OYSTERS *Crassostrea virginica* TO SEQUESTER AMMONIA FROM SHRIMP *Litopenaeus vannamei* IN A LAND-BASED IMTA SYSTEM
- 2:00 Patrick Carroll**, Wade Watanabe, Md Shah Alam
THE EFFECTS OF MARINE RECIRCULATING AQUACULTURE SYSTEM EFFLUENT EXCHANGE RATE ON NUTRIENT UTILIZATION BY *Salicornia virginica* IN A PILOT SCALE INTEGRATED MULTI-TROPHIC AQUACULTURE SYSTEM
- 2:15 Patrick H. Rice**
CONTINUED DEVELOPMENT OF INNOVATIVE HATCHERY TECHNOLOGY FOR BLACK GROUER *Mycteroperca bonaci* INCLUDING INTEGRATED MULTI-TROPHIC AQUACULTURE (IMTA) WITH OYSTERS *Crassostrea virginica* AND SEAWEED *Asparagopsis taxiformis*
- 2:30 John Stieglitz**, Haley Lasco, Seth White, Eva Dickie, Phillip Gillette, Carlos Tudela, Ronald Hoenig
DEVELOPMENT OF SUSTAINABLE PRODUCTION, PROCESSING, AND VALUE-ADDED STRATEGIES FOR TROPICAL SEAWEED SPECIES TO BUILD IMTA CAPACITY IN THE SOUTHEAST U.S. AND CARIBBEAN
- 2:45 Andrezza Carvalho**, Hellyjúnyor Brandão, Julio Zemor, Alessandro Pereira Cardozo, Marcelo Okamoto, Jorge Santos, Luís H. Poersch
GROWTH OF THE MACROALGA *Ulva lactuca* CULTIVATED IN DIFFERENT BIOFLOC STRATEGIES IN AN INTEGRATED SYSTEM
- 3:00 BREAK**
- 3:30 Yuanzi Huo**, Matthew Elliott, Mark Drawbridge
PERFORMANCE AND WATER REMEDIATION CAPACITY OF DULSE *Devaleraea mollis* AND SEA LETTUCE *Ulva lactuca* CULTURED IN THE EFFLUENTS FROM WHITE SEABASS *Atractoscion nobilis* IN A LAND-BASED INTEGRATED MULTI-TROPHIC AQUACULTURE (IMTA) SYSTEM

WEDNESDAY

- 4:00 Jason Danaher**, Jeremy M. Pickens, Jeffrey L. Sibley, Jesse A. Chappell, Terrill R. Hanson, Claude E. Boyd, Huy K. Tran
PETUNIA GROWTH RESPONSE TO CONTAINER SUBSTRATE AMENDED WITH DEWATERED AQUACULTURE EFFLUENT AND TWO DIFFERENT SOURCES OF WATER

RECIRCULATING AQUACULTURE SYSTEMS

Wednesday, February 21 1:30 PM - 5:00 PM Room 1

Chairs: John Davidson, Brian Vinci

- 1:30 Kaitlyn Rullo**, Christine Valcarce
DEVELOPING A STREAMLINED SPME METHOD FOR ANALYSIS OF OFF-FLAVOR COMPOUNDS IN FISH TISSUE USING FARM RAISED TILAPIA
- 1:45 Isaac Wu**, van Sentetn Jonathan, Moeltner Klaus, Ritchie Kaitlynn, Stewart Shamar
WILLINGNESS TO PAY FOR RAS ATLANTIC SALMON BY THE U.S. CONSUMER
- 2:00 John Davidson**, Curtis Crouse, Brian Vinci, Christine Lepine, Megan Murray, Christopher Good
EVALUATING THE FEASIBILITY OF INTEGRATING MULTI-VESSEL MEMBRANE BIOLOGICAL REACTORS WITHIN RAS: EFFECTS ON WATER QUALITY, WATER USE, AND RAINBOW TROUT *Oncorhynchus mykiss* PERFORMANCE
- 2:15 Brian Vinci**, George Chamberlain, Robert Jones, Antonio Santa Marta
OPTIMIZING SUPER-INTENSIVE SHRIMP TANKS
- 2:30 Marlon Greensword**, Ronald F. Malone
SIZING CRITERIA FOR BIOFILTER USED IN INCUBATORS SUPPORTING THE PRODUCTION OF TILAPIA FRY
- 2:45 Gregory J. Fischer**
INTENSIVE PRODUCTION OF WALLEYE *Zander vitreus* IN FLOW-THROUGH AND RECIRCULATING WATER SYSTEMS FROM START TO FINISH INCLUDING HATCHERY DESIGN IMPLICATIONS
- 3:00 Ronald Malone**
DESIGN AND INTEGRATION OF RAS AIRLIFTS

USAS STUDENT SUBUNIT SHOWCASE

Wednesday, February 21 1:30 PM - 3:30 PM Room 20

Chair: Mick Walsh

USAS Student SubUnits share engagement, activities, outreach, and accomplishments over the past year. Session culminates with discussion to share ideas, ask questions, and troubleshoot common issues.

1:30 Michelle L. Mick Walsh

USAS STUDENT SUBUNITS: WHO, WHAT, WHEN, WHERE, WHY, AND HOW?

1:45 Hannah Knuckles, Levi Olhausen, Michele Jones, Dayan Perera

AN OVERVIEW OF ACTIVITIES AND PROGRAMMING FOR UAPB'S USAS STUDENT SUBUNIT FOR 2023

2:00 Adela Araujo, Nicole Tripp, Michael McDonald, Ashley Hennessey

AQUACULTURE OUTREACH AT AUBURN UNIVERSITY

2:15 Emily Hebert, Margaret Lawrence, Barbara Evans

LAKE SUPERIOR STATE UNIVERSITY AQUACULTURE CLUB

2:30 Sandhya Lamichhane, Andrew Stephanus, Vincent Teye, Oluwafemi Adebayo,

Ashton Schardt, Mark Johannemann, Cole Daleiden, Noel Novelo
THE KENTUCKY STATE UNIVERSITY (KSU) UNITED STATES AQUACULTURE SOCIETY STUDENT SUBUNIT: EDUCATION, COMMUNITY, PROFESSIONAL DEVELOPMENT, AND COLLABORATION WITH KSU'S TILAPIA CAPACITY BUILDING PROJECT TO CREATE EXTENSION RESOURCES

2:45 Jessie Appelhans

COLLEGE OF THE FLORIDA KEYS AQUACULTURE SOCIETY SUBUNIT

3:00 Matthew LaGanke, Natalia Schoenberg, Nihal Guennouni, William Calhoun,

Julia Grenn, Anna Caputo, William Walton, Jessica Small
FOUNDING THE AQUACULTURE COLLECTIVE: THE VIRGINIA INSTITUTE OF MARINE SCIENCE STUDENT SUBUNIT OF THE UNITED STATES AQUACULTURE SOCIETY

WEDNESDAY

MACROALGAE

Wednesday, February 21 1:30 PM - 5:00 PM Salon D

Chairs: Melissa Good, Anoushka Concepcion

- 1:30 Anoushka Concepcion**, Melissa Good
INTRODUCTION AND STATUS OF THE U.S. SEAWEED INDUSTRY
- 1:45 Vasu Jayaprakas**, Satish Sahayak
A LARGE -SCALE INDOOR MASS CULTURE PROGRAM FOR THE ALGA *Dunaliella salina* FOR ACHIEVING HIGHEST PRODUCTION OF BETA CAROTENE
- 2:00 Kalani Ortiz**, Simona Augyte Augyte, Rafael Cuevas Uribe
ASSESSING TWINE SELECTION AND GROWTH OF BULL KELP *Nereocystis luetkeana* FROM NURSERY TO OPEN WATER CULTIVATION IN HUMBOLDT BAY, CALIFORNIA
- 2:15 Jang Kyun Kim**, Qikun Xing, Jeong Hwa Hwang, Jae Woo Jung, Ji-Sook Park, Norman Clough, Charles Yarish
EVALUATION OF DIFFERENT SEEDSTRINGS FOR THE *Pyropia* NURSERY
- 2:30 Michael Marty Rivera**, Sergey Nuzhdin, Nina Noujdina
ALTA SEEDS CONSERVANCY: A KELP SEEDBANK FOR AQUACULTURE AND CONSERVATION
- 2:45 Andrezza Carvalho**, Navinésia Carolina Joaquim Rungo, Hellyjúnyor Brandão, Alessandro Pereira Cardozo, Gamze Turan, Luís H. Poersch
GROWTH AND NUTRIENT ABSORPTION BY THE MACROALGA *Ulva lactuca* IN BIOFLOC EFFLUENT
- 3:00 BREAK**
- 3:30 Longhuan Zhu**, David Fredriksson, Michael Chambers, Michael Coogan, Igor Tsukrov, Richards Sunny
INVESTIGATING WHALE SAFE CONCEPTS FOR KELP AQUACULTURE SYSTEM DESIGNS
- 3:45 Michael Ciaramella**
ENHANCING FOOD SAFETY GUIDANCE FOR HARVESTING FOOD-GRADE SEAWEED
- 4:00 Catherine Janasie**, Anoushka Concepcion, Michael Ciaramella
SEAWEED FOOD SAFETY: COMPARING COMPLIANCE WITH PREVENTIVE CONTROLS FOR HUMAN FOODS AND SEAFOOD HACCP

WEDNESDAY

- 4:15 Diego Valderrama**
DEVELOPMENT OF A USER-FRIENDLY TOOL TO MEASURE THE ENVIRONMENTAL IMPACT OF KELP AQUACULTURE THROUGH THE LIFE CYCLE ASSESSMENT (LCA) METHODOLOGY

**SEA GRANT AQUACULTURE RESEARCH SYMPOSIUM:
ADDRESSING ECONOMIC AND MARKET NEEDS
OF THE U.S. AQUACULTURE INDUSTRY**

Wednesday, February 21 1:30 PM - 5:00 PM Salon A
Chairs: Charles Weirich, Mark Rath

- 1:30 Ganesh Kumar**, Jonathan van Senten, Shraddha Hegde, Noah Boldt
ECONOMIC CONTRIBUTION OF U.S. AQUACULTURE FARMS
- 1:45 Frank Asche**, James Anderson, Andrew Ropicki
ECONOMICS OF RISK IN U.S. AQUACULTURE SYSTEMS AND MARKETS
- 2:00 Robert Pomeroy**, Tammy Warner
BUSINESS AND ECONOMIC PLANNING FOR SEAWEED AQUACULTURE SYSTEMS IN THE UNITED STATES
- 2:15 Kellen Parrish**, Gil Sylvia, John Moehl, Clint Bentz, Angee Doerr, Janine Salwasser, Amy Ehrhart, Lisa Gaines, Michael Harte, Ford Evans, Marc Rempel, Marc Muir McCune
THE OREGON AQUACULTURE EXPLORER: AN INTEGRATIVE GEOSPATIAL PLATFORM SUPPORTING AQUACULTURE INVESTMENT, EDUCATION, PERMITTING, AND FINANCIAL PLANNING
- 2:30 Christian Brayden**, Caroline Noblet, Keith Evans, Keri Kaczor, Kanae Tokunaga, Katherine Maltby
EXPANDING YOUR STATE'S BLUE ECONOMY – LESSONS AND FINDINGS FROM MAINE
- 2:45 Darren Okimoto**, Darren Lerner, Jean Schneider, Bradley Fox, Cherie Kauahi, Anne Rosa
UTILIZING AN AQUACULTURE INDUSTRY COLLABORATIVE TO INCREASE HAWAII'S RESILIENCE AND FOOD SECURITY
- 3:00 Lilian Elekwachi**, Dr Renata Lana
LEVERAGING TECHNOLOGY FOR SUSTAINABLE PRACTICES: NAVIGATING THE TRANSFORMATIVE SEAS OF THE U.S. AQUACULTURE, WILD FISHERY AND SEAWEED INDUSTRY THROUGH TECHNOLOGICAL ADVANCEMENTS AND INNOVATIONS

- 3:30 Bradley Fox**, Stuart Nakamoto, PingSun Leung, Armando Garcia-Ortega, Shannon Sand, Andini Desita Ekaputri, Cheng Sheng Lee
ESTABLISHING AN AQUATIC FEED MILL IN HAWAII: CHALLENGES AND PROSPECTS
- 3:45 Bobbi Hudson**, Chris Eardley, Dani Toepelt, Laura Butler
A NEW ELECTRONIC DATA SYSTEM FOR SHELLFISH IN WASHINGTON STATE
- 4:00 Kaitlyn Hudson**, Wade O. Watanabe, Christopher F. Dumas, Thomas M. Losordo, Md Shah Alam, Patrick Carroll
PRODUCTION ECONOMICS OF BLACK SEA BASS *Centropristis striata* IN A RECIRCULATING AQUACULTURE SYSTEM: SENSITIVITY TO GENETICALLY INDUCED GROWTH INCREASES AND ALTERATION OF PROTEIN SOURCES IN AQUAFEEDS
- 4:15 Hikaru Peterson**, Kristi Getschel, Amy Schrank, Donald Schreiner
TRIANGULATING MARKET POTENTIAL FOR FOOD-FISH AQUACULTURE IN MINNESOTA WITH CONJOINT AND PARTIAL BUDGETING ANALYSES
- 4:30 Lianqun Sun**, Ganesh Kumar
RETAIL PRICE INDICES FOR MAJOR SEAFOOD SPECIES IN THE U.S. RETAIL MARKET
- 4:45 Noah Boldt**, Jonathan van Senten, Ganesh Kumar, Katheryn Parraga-Estrada, Shraddha Hegde, Maria Haws, Matthew Parker, Quentin Fong, Scott Knoche, Christian Brayden, David Crisostomo, René Estevez Amador
ADVANCING AQUACULTURE ECONOMICS, MARKETING RESEARCH AND EXTENSION: A NATIONAL INITIATIVE THROUGH PARTNER SEA GRANT PROGRAMS

BRACKISH WATER AQUAPONICS

Wednesday, February 21 1:30 PM - 3:00 PM Salon L

Chairs: Jill Fisk, Leo Fleckenstein

- 1:30 Rayne C. Pollack**, Jill C. Fisk, Andrew J. Ray
COMPARING AEROBIC AND ANAEROBIC MINERALIZATION OF SLUDGE FROM CLEAR-WATER AND HYBRID BRACKISH-WATER RAS
- 1:45 Arnold Katende**, Emmanuel Ayipio, Dorcas Lukwesa, Daniel E. Wells
SPLIT-ROOT HYDROPONICS: INVESTIGATING CHERRY TOMATO RESILIENCE TO SALINITY STRESS

- 2:00 Dorcas Lukwesa**, Arnold Katende, Emmanuel Ayipio, Daniel Wells
EVALUATION OF SPLIT-ROOT SYSTEM IN SHRIMP EFFLUENT-BASED
SALINE AQUAPONICS FOR MANAGING SALINITY STRESS IN RED KALE
(‘KX-1’) *Brassica napus* L. var Pabularia
- 2:15 Jill Fisk**, Leo J. Fleckenstein, Andrew J. Ray
BRACKISH WATER AQUAPONICS – WHAT WE HAVE LEARNED

BUILDING THE NOAA AQUACULTURE PROGRAM

Wednesday, February 21 1:30 PM - 5:00 PM Salon K

Chairs: Danielle Blacklock, Kristine Cherry

The NOAA Aquaculture Program has the unique opportunity to build a Program Plan that will articulate how growth of the Program will achieve the goals of the 2023-2028 NOAA Aquaculture Strategic Plan and serve the public in the science-based growth of a sustainable aquaculture industry in the U.S. In this session, NOAA will be describing what has been achieved in implementing the Strategic Plan and where it’s going next, and then engage participants in a discussion on their priorities for NOAA’s aquaculture activities and where program growth would be most beneficial to stakeholders.

WEDNESDAY

