

NCCOS AT THE 2019 US HAB MEETING

(NCCOS affiliates in bold type)

Advisory and Financial Committee

Maggie Broadwater (NCCOS)

Lisa Campbell (TAMU)

Timothy Davis (BGSU)

Quay Dortch (NCCOS)

Deana Erdner (UTX)

Leanne Flewelling (FWC)

Meredith Howard (CWB)

Barbara Kirkpatrick (GCOOS)

Mindy Richlin (WHOI)

Alison Robertson (DISL)

Marc Suddleson (NCCOS)

Pre-Conference Workshops

Imaging Flow Cytobot Workshop: Organizers: **Lisa Campbell** (TAMU); **Ivory Engstrom** (McLane Research Labs)

Phytoplankton Identification Workshop: Organizers: **Alison Robertson** (DISL, **Michael Parsons** (FGCU), and **Barry Rosen** (FGCU) along with industry partners from FlowCam, Horiba, Turner Designs, and bbe Moldaenke.

Communicating HAB Science: Organizers: **Mindy Richlen** (WHOI), **Tim Davis** (BGSU), and **Holly Bowers** (CALSTATE)

Special Event: Thinking Outside the Box: Career options and strategies for new graduates and early career scientists: Molly Miller, organizer (DISL), Maggie Broadwater, panelist (NCCOS)

Plenary Speakers

Plenary 2: **Meredith Howard** (California Water Board):
MONITORING HAB TOXINS ACROSS THE FRESHWATER-
MARINE CONTINUUM

Plenary 3: **Stephanie Moore** (NOAA NWFSC): TOWARDS A
SOCIAL-ECOLOGICAL SYSTEMS APPROACH TO ADDRESSING
CLIMATE IMPACTS ON HABS

Session Chairs

Session: Innovation in HAB Detection. Session Chair: **Michael Brosnahan** (WHOI)

Session: Bloom Dynamics & Drivers I. Session Chair: **Kimberly Reece** (VIMS)

Session: Innovation in HAB Detection. Session Chair: **Michael Brosnahan** (WHOI)

Session: Method Validation and Reference Materials: Session Co-Chair: **John Ramsdell** (NCCOS)

Session: Bloom Dynamics & Drivers III: Session Chair: **Dave Hambright** (UOKla)

Session: Predictive Models & Forecasting: Session Chair: **Michael Parsons** (FGCU)

Session: Microbial Interactions: Session Chair: **Deana Erdner** (UTX)

Session: Ecophysiology I: Session Chair: **Christopher Gobler** (Stony Brook U)

Session: Ecophysiology II: Session Chair: **Justin Chaffin** (Ohio SU)

Session: Monitoring & Management I: Session Chair: **Holly Bowers** (DISL)

Session: Monitoring and Management II: Session Chair: **Timothy Davis** (BGSU)

Session: Climate I: Session Chair: **Greg Doucette** (NCCOS)

Session: Climate II: Session Chair: **Clarissa Anderson** (SIO)

Session: Mitigation & Control I: Session Chair: **Leanne Flewelling** (FWC)

Session: Food Web Dynamics & Impacts: Session Chair: **Marc Suddleson** (NCCOS)

Session: Engaging Citizens & Stakeholders: Session Chair: **Barbara Kirkpatrick** (GCOOS)

Session: Animal and Human Health: Session Chair: **Kathi Lefebvre** (NWFSC)

Special Session: Oceans and Human Health: Session Chair: **Mindy Richlen** (WHOI)

Mixed Panel: User Opinions and Round Table Discussion: **Maggie Broadwater** (NCCOS), **Raphael Kudela** (UCSC), **John Ramsdell** (NCCOS)

HAB Town Hall Meeting:

The [National Harmful Algal Bloom Committee](#) (NHC) and partners will host a town hall event aimed at discussing current events, funding, and issues relevant to the HAB community. These will include a NOAA program update, NHC update, legislative and funding update, international programs update, and community interest update. All attendees are encouraged to attend and ask questions. **NHC members and partners include NCCOS affiliates.**

Presentations

NCCOS Projects

Gregory Doucette (NCCOS): THE 3RD GENERATION ESP/LONG-RANGE AUV: FIRST TESTS OF AUTONOMO US, UNDERWAY

SAMPLING AND ANALYSIS OF MICROCYSTIN IN WESTERN LAKE ERIE (oral)

Reagan Errera (GLERL), Henry Vanderploeg (GLERL), **Greg Doucette** (NCCOS), **Christina Mikulski** (NCCOS), et al.: ESTABLISHING A NETWORK OF ADVANCE TECHNOLOGIES: LONG-TERM MONITORING OF CYANOBACTERIA BLOOMS IN THE GREAT LAKES (oral)

Karen Kavanaugh (NOAA CO-OPS): THE CHALLENGING ROAD TO OPERATIONS: TRANSITIONING A LAKE ERIE HARMFUL ALGAL BLOOM FORECAST (poster)

Steve Kibler (NCCOS), **Kris Holderied** (NCCOS), **Dominic Hondolero** (NCCOS), et al.: PREVALENCE OF PARALYTIC SHELLFISH TOXINS IN THE MARINE FOOD WEB OF SOUTH CENTRAL AND SOUTHWEST ALASKA (oral)

Steven Kibler (NCCOS): COMMUNITY BASED PSP TESTING FOR SUBSISTENCE AND RECREATIONAL SHELLFISH HARVESTING IN SOUTHWESTERN ALASKA (poster)

Wayne Litaker (NCCOS): PROPOSAL FOR DEFINING DINOFLAGELLATE SPECIES BASED PRIMARILY ON MOLECULAR CRITERIA (oral)

Richard Stumpf (NCCOS): REAL-TIME FORECASTS FOR BREVETOXIN RESPIRATORY IRRITATION (oral)

Richard Stumpf (NCCOS) et al: BIOPHYSICAL DRIVERS FACILITATING A TOXIGENIC CYANOBACTERIAL BLOOM IN A MAJOR GREAT LAKES TRIBUTARY (oral)

Michelle Tomlinson (NCCOS): APPLYING THE RED-BAND DIFFERENCE CHLOROPHYLL-A FLUORESCENCE ALGORITHM FOR SATELLITE DETECTION OF HIGH BIOMASS HABs OTHER THAN KARENIA BREVIS (poster)

Ecology and Oceanography of Harmful Algal Blooms (ECOHAB) Program

Ashley Brandt (FGCU): CLIMATE CHANGE INFLUENCES ON CONNECTIONS BETWEEN CIGUATERA FISH POISONING AND CORAL REEFS (poster)

Erik Broemsen (UNC Charlotte): DISRUPTING THE CYCLE: DOES MIXOTROPHY DESYNCHRONIZE CELL DIVISION IN KARLODINIUM VENEFICUM (oral)

Clayton Bennett (DISL), **Tyler Smith** (UVI), **Alison Robertson** (DISL): SPATIOTEMPORAL DISTRIBUTION AND TROPHIC LAG OF CARIBBEAN CIGUATOXINS IN FISH SECONDARY CONSUMERS FROM THE US VIRGIN ISLANDS (oral)

Erik Broemsen (UNC Charlotte): DISRUPTING THE CYCLE: DOES MIXOTROPHY DESYNCHRONIZE CELL DIVISION IN KARLODINIUM VENEFICUM (oral)

Justin Chaffin (Ohio SU): FORECASTING LAKE ERIE CYANOBACTERIAL BLOOM TOXICITY (oral)

Hans Dam (UCONN): WILL ALEXANDRIUM THRIVE IN A GREENHOUSE WORLD? IT'S COMPLICATED (oral)

Sonya Dyhrman (Columbia U): TRACKING PATTERNS OF PHYSIOLOGICAL ECOLOGY IN AUREOCOCCUS AND ITS COMPETITORS OVER THE COURSE OF A BLOOM (oral)

Todd Egerton (VA Dept. Health): ALGAL BLOOM SUCCESSION IN LOWER CHESAPEAKE BAY; ENVIRONMENTAL NICHES AND SEASONAL AND SPATIAL DISTRIBUTIONS (poster)

Michael Echevarria (ODU): PHOTOSYNTHESIS-IRRADIANCE KINETICS OF MARGALEFIDINIUM POLYKRIKOIDES, A POTENTIALLY MIXOTROPHIC HAB SPECIES, IN THE LAFAYETTE RIVER, A SUB-TRIBUTARY OF THE CHESAPEAKE BAY (poster)

Yida Gao (UTX), **Deanna Erdner** (UTX): THE EFFECTS OF ENVIRONMENTAL STRESSORS ON CELL DEATH RESPONSES OF TOXIC DINOFLAGELLATE KARENIA BREVIS AND POTENTIAL BLOOM DECLINE PROCESSES (oral)

Pat Glibert (UMD): CLIMATE- INDUCED INTERANNUAL VARIABILITY AND LONG-TERM CHANGE IN SEVERAL COMMON HABS OF CHESAPEAKE BAY (oral)

Christopher Gobler (Stony Brook U): HARMFUL ALGAL BLOOMS: A CLIMATE CHANGE CO-STRESSOR IN MARINE AND FRESHWATER ECOSYSTEMS (oral)

Cynthia Heil (MML): POTENTIAL 'NEW' NITROGEN AND PHOSPHORUS INPUTS TO THE 2018 KARENIA BREVIS BLOOM FROM LAKE OKEECHOBEE DISCHARGES AND THE DISPLACED MICROCYSTIS AERUGINOSA BLOOM (oral)

Andrea James (FGCU): THE EXAMINATION OF GRAZING PREFERENCES EXHIBITED BY HERBIVOROUS INVERTEBRATES ON THE COMMON MACROALGAL HOSTS OF GAMBIERDISCUS SPP (poster)

Bruce Keafer (WHOI): EARLY WARNING OF SHELLFISH TOXICITY ALONG THE EASTERN MAINE COAST USING ENVIRONMENTAL SAMPLE PROCESSORS (ESPS): EVALUATION OF THE "LEAKY GYRE" HYPOTHESIS (oral)

Raphael Kudela (UCSC): RESOLVING THE APPARENT PARADOX OF TEMPERATURE AND PSEUDO-NITZSCHIA EVENTS (oral)

Margaret Mulholland (ODU): INTERANNUAL VARIABILITY IN BLOOMS OF MARGILEFIDINIUM POLYKRIKOIDES IN THE SOUTHERN CHESAPEAKE BAY (oral)

Gihong Park (UConn): INTERACTION OF GRAZER EXPOSURE AND NUTRIENT REGIME ON PRODUCTION AND GROWTH IN ALEXANDRIUM CATENELLA (oral)

Allen Place (UMD): BEYOND THE TRANSCRIPTOMES: BIOCHEMICAL AND PROTEOMIC VALIDATION OF THE PKS MACHINERY INVOLVED IN STEROLYSIN PRODUCTION (oral)

Matthew Parrow (UNC Charlotte): IMAGE CYTOMETRY FOR CELL CYCLE ANALYSIS OF A MIXOTROPHIC HAB DINOFLAGELLATE IN BLOOMS (poster)

Matthew Parrow (UNC Charlotte): SYSTEMATICS OF THE (SOMETIMES) HARMFUL CRYPTHECODINIUM-LIKE DINOFLAGELLATES (poster)

Michael Parsons (FGCU): THE GREATER CARIBBEAN CENTER FOR CIGUATERA RESEARCH: CLIMATE CHANGE AND HUMAN HEALTH (poster)

Kimberly Reece (VIMS): PATTERNS AND IMPACTS OF SUMMER BLOOMS IN THE LOWER CHESAPEAKE BAY (oral)

Kathryn Ribble (FGCU): CIGUATERA AND HERBIVORY: GRAZING DYNAMICS OF THE PINFISH (LAGODON RHOMBOIDES) ON THALASSIA TESTUDINUM AND HALIMEDA INCRASSATA IN THE FLORIDA KEYS (poster)

Clara Robison (VIMS): OBISON: IMPACTS OF MARGALEFIDINIUM POLYKRIKOIDES AND ALEXANDRIUM MONILATUM ON OYSTERS CULTURED IN LOWER CHESAPEAKE BAY (poster)

Gail Scott (VIMS): WATER QUALITY PARAMETERS AND LATE SUMMER HARMFUL ALGAL BLOOMS IN THE LOWER CHESAPEAKE BAY (poster)

Jayme Smith (SCCWRP), **Meredith Howard** (CA Water Board), **Raphael Kudela** (UCSC): PERSISTENT DOMOIC ACID IN THE SEDIMENTS AND BENTHIC INFAUNA IN CALIFORNIA (oral)

Event Response Program

Richard Bartleson (Sanibel-Captiva Cons. Found.) **Tod Leighfield** (NCCOS), **Heather Barron** (CROW), et al.: WHAT IS SAFE FOR SEA TURTLES TO EAT DURING AN EXTREME SOUTHWEST FLORIDA RED TIDE? (oral)

Mike Beiser (MS DEQ): THE SUMMER OF 2019: OVERVIEW OF HARMFUL ALGAL BLOOM THAT AFFECTED MISSISSIPPI'S BEACHES (oral)

Rachel Brewton (FAU): NUTRIENT OVER-ENRICHMENT AND BROWN TIDE RESULT IN LIGHT LIMITATION OF SEAGRASS COMMUNITIES IN THE INDIAN RIVER LAGOON (oral)

Chris Kelble (NMFS): ENGAGING COMMERCIAL FISHERMEN TO FILL CRITICAL MONITORING GAPS FOR RED TIDE (oral)

Kari Lanphier (Sitka Tribe AK), **Chris Whitehead** (Sitka Tribe AK): COMMUNITY-BASED MITIGATION OF HARMFUL ALGAL BLOOMS AND SHELLFISH POISONINGS IN SOUTHEAST ALASKA (oral)

Kathi Lefebvre (NWFSC), **Steve Kibler** (NCCOS), **Donald Anderson** (WHOI), et al.: ALGAL TOXINS IN ALASKAN ARCTIC FOOD WEBS: SEAWATER, ZOOPLANKTON, BIVALVES, FISH, ICE SEALS, WALRUSES AND WHALES! (oral)

Molly Miller (DISL): SPATIOTEMPORAL TRENDS AND ENVIRONMENTAL DRIVERS OF CYANOBACTERIAL BLOOMS AND MICROCYSTIN PRODUCTION IN THE NORTHERN GULF OF MEXICO FROM THE 2019 BONNET CARRÉ SPILLWAY RELEASE (oral)

Michael Parsons (FGCU): DO AIRBORNE MICROCYSTINS PRESENT A HUMAN HEALTH RISK? (oral)

Brady Skaggs (Lake Pontchartrain Basin Foundation): MONITORING AND SURVEILLANCE OF THE 2019 ALGAL BLOOM IN LAKE PONTCHARTRAIN (oral)

Monitoring and Event Response for Harmful Algal Blooms (MERHAB) Program

Nicolaus Adams (NMFS), **Urban Tillmann** (Alfred Wegner Inst.), **Vera Trainer** (NMFS): AZADINIUM SPINOSUM AND AZADINIUM POPORUM IN THE INLAND AND COASTAL WATERS OF THE PACIFIC NORTHWEST FROM 2014-2018 (oral)

Clarissa R. Anderson (SIO) **Raphael Kudela** (UCSC), **Vera Trainer** (NWFSC), **Stephanie Moore** (NWFSC), **Ryan McCabe** (UWA), **Parker MacCready** (UWA), et al.: CONNECTING STAKEHOLDERS TO ECOSYSTEM CHANGE WITH HARMFUL ALGAL BLOOM AND

HYPOXIA FORECAST MODELS IN THE CALIFORNIA CURRENT SYSTEM (oral)

Michael Brosnahan (WHOI): MODEL OF HEATING- AND CHILLING-BASED DORMANCY CONTROLS IN A. CATENELLA CYSTS (oral)

Jayne Smith (SCCWRP): ECOTOXICITY OF CYANOTOXINS IN FRESHWATER HABITATS - A SYSTEMIC REVIEW OF THE LITERATURE (poster)

Prevention, Control, and Mitigation of HABs (PCM HAB) Program

Devin Burris (MML): IDENTIFICATION AND QUANTIFICATION OF CHEMICAL SIGNALS THAT INDUCE BACTERIAL ALGICIDAL ACTIVITY ON KARENIA BREVIS (poster)

Kathryn Coyne (UDEL): EFFECTS OF DINOFLAGELLATE-SPECIFIC (IRI-160AA) ON MICROBIAL COMMUNITIES: A NEXT GENERATION SEQUENCING APPROACH (oral)

Leanne Flewelling (FWC): INTEGRATION OF AN ALTERNATIVE METHOD OF BREVETOXIN ANALYSIS INTO NEUROTOXIC SHELLFISH POISONING MONITORING AND MANAGEMENT IN THE GULF OF MEXICO (oral)

Matt Garrett (FWC), **Leanne Flewelling** (FWC), **Katherine Hubbard** (FWC) et al.: PRELIMINARY USE OF SOLID PHASE ADSORPTION TOXIN TRACKING (SPATT) FOR BREVETOXINS IN THE HYPOTHESIZED FORMATIVE REGION OF KARENIA BREVIS BLOOMS (oral)

Emily Healey (UDEL): EFFECT OF PREVENTATIVE DOSING OF ALGICIDE IRI-160AA ON NON-TARGET MICROBIAL COMMUNITIES (poster)

Darren Henrich (TAMU), **Lisa Campbell** (TAMU): APPLICATION OF A CONVOLUTIONAL NEURAL NETWORK FOR IMAGE CLASSIFICATION TO IMPROVE AUTOMATED EARLY WARNING NOTIFICATIONS OF HABs FROM THE IMAGING FLOWCYTOBOT (IFCB) (oral)

Katherine Hubbard (FWC): DEMONSTRATION OF AN INTEGRATED OBSERVATION AND FORECASTING NETWORK DURING THE 2017-2019 KARENIA BREVIS BLOOM (oral)

Lauren Krausfeldt (UTENN): DIFFERENT PHYSIOLOGICAL RESPONSES AND TOXICITY RELATED TO N-SPECIATION ARE REVEALED BY TRACING LABELED N THROUGH THE METABOLOME OF MICROCYSTIS AERUGINOSA (oral)

Yanfei Wang (UDEL), **Kathryn Coyne** (UDEL): IMMOBILIZATION OF ALGICIDAL BACTERIUM SHEWANELLA SP. IRI-160 AND ITS APPLICATION TO CONTROL HARMFUL DINOFLAGELLATES (oral)