

# NACE/MAS Aquaculture Conference Schedule

Wednesday, January 11

8:00 AM - 5:00 PM

Recirculating Aquaculture Systems Workshop (Kent Room)  
Field Trips leave at various times (meet in the hotel lobby)

4:00 PM Registration opens in the Hotel Lobby

7:00 PM Opening Reception in the Narragansett Ballroom (trade show opens)

Thursday, January 12

7:00 AM Registration in Hotel Lobby

8:30 AM Plenary Session in the Narragansett Ballroom

Rapid fire industry updates of issues facing the northeastern states

10:00 AM

Break & Trade Show opens in the Narragansett Ballroom

	Bristol/Kent	Newport/Washington	Providence II/III	Providence I/IV	South County (classroom)
	<b>Shellfish Genetics and Breeding Forum</b>	<b>Public Health</b>	<b>General Aquaculture</b>	<b>Social Aspects of Aquaculture</b>	<b>Farmer to Farmer: What Works and Doesn't When it Comes to Biofouling Control</b>
	<i>Chairs: Paul Rawson and Marta Gomez-Chiarri</i>	<i>Chair: Paul Anderson</i>	<i>Chair: Mark Dixon</i>	<i>Chair: Teresa R. Johnson</i>	<i>Chairs: Tessa Getchis, Sandra Shumway, Alex Walsh, Stephan Bullard</i>

10:30 AM

Almost a decade ago, a group of shellfish breeders met and formulated a long range plan for a Atlantic Coast Shellfish Breeding Consortium to promote coordination and collaboration. One of the outcomes from that initiative was the creation of a USDA Agricultural Research Service program in shellfish genetics. This forum will present the rationale associated with a regional breeding consortium, current activities of consortium, and a possible template for how a regional breeding program might be organized, based on the current breeding program at the Virginia Institute of Marine Science. Open discussion is encouraged on commercial problems that breeding might impact and on suggestions for future directions.

Assessing Opportunities for Aquaculture in Shellfish Growing Areas Adjacent to Wastewater Treatment Plant Outfalls: Determination of Viral Reduction Performance, Impacts on Shellfish Safety and Informing Harvest Managers  
*Steve Jones*

Enhancing a long-standing applied shellfish farming course through expanded access, public education, and online learning  
*Azure Cygler*

Understanding social carrying capacity in Maine's aquaculture industry  
*Teresa R. Johnson*

This hands-on workshop will focus on new science-based and farm-tested remedies for biofouling. Attendees will be provided a brief overview of the various organisms that cause problems for aquaculture gear, animals, and operations, be informed of the massive economic impacts on global aquaculture, and introduced to new promising remedies. Aquaculture producers from east and west coast will present the results of the field trials on their farms. Participants will have the opportunity to view coated and uncoated gear pieces, and ask farmers about their experiences with the different antifouling coatings. Researchers will be on hand to listen to suggestions with respect to product development and future directions for biofouling research and to answer questions.

10:45 AM

Preliminary assessment of surficial enterococci on sugar kelp (*Saccharina latissima*)  
*Adam St. Gelais*

Reconnecting with their marine roots: Maine's native tribes experiment with small scale aquaculture  
*Theodore Willis*

Coastal gentrification's impact of aquaculture expansion: a comparative analysis of three bays in Maine  
*Sam Hanes*

11:00 AM

Shellfish and coastal water contamination from bird feces  
*Steve Jones*

Mariculture in Québec (Canada) moving forward : statement, challenges, and perspectives  
*Marie Lionard*

Who gets the farm vs. I'm not dead yet  
*Miranda Ries*

11:15 AM

Applying surveillance and seasonal trend analysis to identify conditions that influence *V. parahaemolyticus* concentrations in New England shellfish  
*Meghan Hartwick*

Offshore shellfish aquaculture in Federal water  
*Ted Maney*

Appreciation of the hive - the value of a trade association and keeping it working  
*Margaret Pilaro Barrette*

11:30 AM

*Vibrio parahaemolyticus* management for oysters in Massachusetts  
*Chris Schillaci*

Update on the development of small, local shellfish hatcheries and increasing hatchery production methods for existing hatcheries culturing the eastern oyster, *Crassostrea virginica*  
*Kim Tetrault*

Welcome home: Military veterans and shellfish aquaculture - a natural business fit parts I & II

11:45 AM

*Vibrio sp.* abundance in oysters, water and sediment sampled from various treatment/culture conditions  
*Abigail Scro*

Farming Pacific White Shrimp (*Litopenaeus vannamei*) in a Biofloc System at Jackson Estuarine Laboratory, New Hampshire  
*Erich Berghahn*

*Daniel Barth*

12:00 PM

Lunch in the Narragansett Ballroom

	Bristol/Kent	Newport/Washington	Providence II/III	Providence I/IV	South County
	<b>Aquaculture and the Environment I</b>	<b>Aquaculture Management</b>	<b>Finfish farming</b>	<b>Data: what is available and what is needed</b>	<b>Is the Algae Really Greener on the Other Side? West Coast Growers Perspectives on Raising Shellfish on the "Other" Coast</b>
	<i>Chair: Julie Rose</i>	<i>Chair: Kristin DeRosia-Banick</i>	<i>Chair: Dylan Redman</i>	<i>Chair: Reed Porter</i>	<i>Chair: Margaret Pilaro Barrette</i>
1:30 PM	Interactions between tides, currents, and water quality in the Damariscotta estuary <i>Brandon Lieberthal</i>	A coastal ecosystem service valuation approach for sustainable resource management <i>Carrie Byron</i>	A strain comparison of striped bass cultured in recirculating systems at different salinities <i>Linus Kenter</i>	We live in a data rich age. We now have access to more data and computing power and often that outpaces our ability to use it. But that does not mean we have all the data we need. Using the lens of east coast shellfish siting and permitting, we will address mapping data and placing it into a useable format for multiple stakeholders. We will hear about data we need in terms of not only environmental data and data on uses of the marine environment, but also about incorporating data on legal rules and regulations. This session will conclude with a discussion about the data requirements for siting. What is necessary for it to be effective? Is it too onerous, or do you believe more data are required?	Join Shellfish Growers from the West Coast and find out who's got the greenest algae during this interactive panel session. Learn about different species and growing methods employed on the West Coast as well as the latest research and policy questions being considered. Panelists will offer their perspective and then be put on the spot with some provoking questions both from the moderator and attendees
1:45 AM	Seasonality and size selective feeding of the eastern oyster ( <i>Crassostrea virginica</i> ) on phytoplankton in the Damariscotta River estuary, Maine <i>Laura Lubelczyk</i>	Management considerations for expanding aquaculture in Massachusetts <i>Chris Schillaci</i>	Effect of strain and domestication on stress-growth-immune interactions in striped bass <i>Linus Kenter</i>		
2:00 AM	Evaluating detritus as a supplemental diet for bivalve aquaculture <i>Adrianus Both</i>	What is the future of Connecticut shellfish? <i>Tessa Getchis</i>	Development of a novel taurine technology to support sustainable aquaculture <i>Catherine Pujol-Baxley</i>		
2:15 AM	What makes an area productive for oyster aquaculture and why? <i>Carter Newell</i>	Seaweed production in Connecticut: an interagency effort to establish permitting guidance for seaweed intended for human consumption <i>Kristin DeRosia-Banick</i>	Scratching the surface: a sentinel exploration of sea louse infestations in Cobscook bay, Maine. <i>Catherine Frederick</i>		
2:30 AM	Closer to the truth -- chlorophyll a from in vivo fluorescence-based sensors <i>Judy Li</i>	Market analysis and strategic implications for Maine's cultured shellfish <i>Chris Vanderweidt</i>	Factors influencing catch rates of traditional eel traps in the St. John River, New Brunswick, Canada <i>Aruna Jayawardane</i>		
2:45 AM	Aquaculture sustainability – what is it and how do we assess it? <i>Gary Wikfors</i>	Discussion	Novaeel: the science behind a commercially viable eel farming industry for the North America. <i>Neil W. Ross</i>		
3:00 PM	Break in the Narragansett Ballroom				
	<b>Aquaculture and the Environment II</b>	<b>Northeast Ocean Plan</b>	<b>IMTA</b>	<b>Aquaculture Education: Is there something fishy going on at school?</b>	<b>Aquaculture Policy Forum</b>
	<i>Chair: Julie Rose</i>	<i>Chairs: Betsy Nicholson, Kevin Madley and Mason Silkes</i>	<i>Chair: Lindsay Green</i>	<i>Chair: Anne Langston</i>	<i>Chair: Bob Rheault</i>
3:30 PM	Restorative Aquaculture: Accounting for the ecosystem service benefits provided by shellfish and macro-algal culture <i>Boze Hancock</i>	Over the past four years, the Northeast Regional Planning Body has worked with government, non-government organizations and industry to develop the Northeast Ocean Plan, which has recently been approved by the White House for implementation. Through a panel and discussion, this session will give an overview of the Plan's commitments, provide suggestions from NOAA Fisheries on how the plan can inform aquaculture regulatory and siting issues, including how these actions tie to other regional aquaculture planning and the Mid Atlantic Ocean Action Plan, and finally provide an industry perspective on how the Plan can be most useful.	Integrated multi-trophic aquaculture research, outreach and training for coastal communities in New England <i>Michael Chambers</i>	A series of speakers will present "lightning talks", and/or exhibit your work, ideas, or curricula related to aquaculture education. The session will have two parts: part 1 focussed on formal and informal K-12 aquaculture education, and part 2 focussed on training programs and higher education.	Top shellfish industry experts will frame the following issues, discuss the status and direction and actions being taken or needed by industry members including: 1) ISCC issues vibrio plans, norovirus, Rewriting the Aquaculture Chapter of the Model Ordinance, Reduced Oxygen Packaging and how to submit a proposal to change the Model Ordinance 2) Interstate seed transfer issues 3) NOAA / NMFS funding for Milford aquaculture research and science issues 4) Broader coalitions seeking to formulate national aquaculture legislation 5) EU trade prohibitions and updates on potential resolution 6) Protected Resources issues (eelgrass and red knots, sturgeon and right whales)
3:45 AM	Horseshoe crab activity and interactions on rack-and-bag oyster farms <i>Daphne Munroe</i>		Integrating mussel and kelp long-line culture structures and management <i>Scott Lindell</i>		
4:00 AM	Do benthic habitats associated with different oyster farming methods host different finfish biodiversity? <i>Yuan Liu</i>		Small and modest scale aquaponics on Massachusetts' north shore <i>Joseph Buttner</i>		
4:15 AM	Capturing a wasted opportunity: characterization of aquaculture waste as a nutrient source for hydroponics <i>Alexander Sitek</i>		Applying engineering principles to the design of recirculating aquaponic systems <i>Todd Guerdat</i>		
4:30 AM	Development of seaweed aquaculture in Washington State to evaluate capacity to influence seawater chemistry, habitat potential and to provide local food and fuels <i>Joth Davis</i>				
4:45 AM	Discussion	Panel Discussion			
5:00 PM	Poster Session & Happy Hour in the Narragansett Ballroom				
6:00 PM	East Coast Shellfish Growers Association Annual Meeting (South County Room)				
6:00 PM	Dinner on your own out on the town				

Friday, January 13					
7:00 AM	Registration in the Hotel Lobby				
7:00 AM	Breakfast in location TBD				
	Bristol/Kent	Newport/Washington	Providence II/III	Providence I/IV	South County
	<b>Shellfish Biology</b>	<b>Shellfish Husbandry I</b>	<b>Seaweed Farmers Forum</b>	<b>Overview of 2016 Northeast Region Phytoplankton Blooms</b>	<b>Roll Your Own (oyster seed that is) Growers Forum</b>
	<i>Chair: Joe Choromanski</i>	<i>Chair: Shannon Meseck</i>	<i>Chair: Seth Barker</i>	<i>Chair: Kevin Madley</i>	<i>Chair: Dana Morse</i>
8:30 AM	Thermal tolerance of juvenile Atlantic surf clams ( <i>Spisula solidissima</i> ): a step towards diversifying the New Jersey shellfish aquaculture sector <i>Michael Acquafredda</i>	Biological and chemical changes in algal concentrates: what does this mean to oysters? <i>Shannon L. Meseck</i>	A panel of growers, business owners, and advisors will explore the future of seaweed farming with a file folder of lessons learned and a clear eye on the future.	This session aims to recap the busy year of phytoplankton blooms and shellfish closures in the New England region through presentations from state, federal, and academia participants and aquaculturists in the impacted areas. We hope to provide a forum for industry and resource managers to share experiences across state boundaries, ask questions, and discuss future actions to help manage for minimization of impacts to the shellfish industries.	The Roll Your Own session is a technology transfer discussion - from oyster growers to oyster growers - focused on this important piece of production equipment. The session will feature producers describing their inventions, and the pro's and con's of their use. After the presentations, all growers in the room will vote anonymously on their favorite design, and the winner will receive a copy of The Eastern Oyster.
8:45 AM	Development of internal immune capacity assays for the Atlantic jackknife clam, <i>Ensis directus</i> <i>Brian Preziosi</i>	Site specific husbandry & spawning protocols for <i>Tridacna</i> sp. at Sound School Aquaculture Center <i>Mitchell Stephens</i>			
9:00 AM	Acquiring molecular tools for advancing the oyster genetic system <i>José A. Fernández Robledo</i>	Juvenile <i>Spisula</i> , endeavors into butter clam culture <i>Diane Murphy</i>			
9:15 AM	Sea scallop resource enhancement in the offshore waters of new england <i>Ronald Smolowitz</i>	Can the bay scallop, <i>Argopecten irradians</i> be selected for higher meat yield? <i>Emma Green-Beach</i>			
9:30 AM	Rock scallop aquaculture potential on the Pacific Coast <i>Joth Davis</i>	Preventative treatments for the control of blister worm <i>Polydora websteri</i> in the eastern oyster <i>Crassostrea virginica</i> <i>Paul Rawson</i>			
9:45 AM	Discussion	Does Full Measure Cal® improve oyster shell strength in an upweller nursery – a progress report <i>Dale Leavitt</i>			
10:00 AM	Break in the Narragansett Ballroom				
	Bristol/Kent	Newport/Washington	Providence II/III	Providence I/IV	South County
	<b>Shellfish Health</b>	<b>Shellfish Husbandry II</b>	<b>Kelp Farming</b>	<b>Shellfish Theft Deterrence</b>	<b>Instrumentation for Site Evaluations</b>
	<i>Chair: Diane Kapareiko</i>	<i>Chair: David Veilleux</i>	<i>Chair: Judy Li May</i>	<i>Chair: Chris Schillaci</i>	<i>Chair: Dale Leavitt &amp; Chris Davis</i>
10:30 AM	Trematode associated mortality in blue mussel populations in the Northeast U.S. <i>Roxanna Smolowitz</i>	Bay scallop ( <i>Argopecten irradians</i> ) nursery and growout strategies <i>Harrison Tobi</i>	Development of a simple, low cost, adjustable farm system for sea vegetable culture in Maine <i>Adam T. St. Gelais</i>	Law enforcement's role in preventing aquaculture theft in Rhode Island <i>Jeff Mercer</i>	This hands-on laboratory will provide both practical experience and useful knowledge to culturist. In the first session, participants will examine the anatomy of 3 important bivalves, eastern oysters, surf clams (as a proxy for hard clams), and sea scallops. Participants will learn how to identify disease abnormalities and evaluate the animal's condition. The how and why of sample submission to a diagnostic lab will be discussed.
10:45 AM	Evaluation of efficacy of formulated probiotics for <i>Crassostrea virginica</i> larvae against infection of <i>Vibrio coralliilyticus</i> RE22. <i>Tejashree Modak</i>	Experiences starting small oyster seed without an upweller <i>Josh Reitsma</i>	Two seasons of kelp farming a unique phenotype of <i>Saccharina latissima</i> from the Gulf of Maine with a focus on production <i>Simona Augyte</i>	Private legal remedies for theft from shellfish aquaculture systems <i>Andrew Rubin</i>	
11:00 AM	Emergence of neoplastic disease in hard clams ( <i>M. Mercenaria</i> ) <i>Diane Murphy</i>	Design modifications of a low cost floating upweller system (FLUPSY). <i>Michael Slade</i>	Improved siting of kelp aquaculture using n15 stable isotope analysis <i>Gretchen Grebe</i>	Aqualens connect farm surveillance camera system <i>Durval Tavares</i>	
11:15 AM	Development of strategies to mitigate QPX disease in the hard clam <i>Bassem Allam</i>	An evaluation of flip bags for growing oysters <i>Matt Griffen</i>	Identifying and addressing process-related challenges to the expansion of sea vegetable aquaculture in Connecticut <i>Anoushka Concepcion</i>	Use of long range low light camera system for continuous video surveillance of oyster beds on Cape Cod <i>Dave Ryan</i>	
11:30 AM	Milford probiotic strain OY15 moves toward commercialization and effects of probiotic <i>Bacillus</i> strains on oyster hemocyte immune functions: results of a cooperative research and development agreement (CRADA) between the Milford Laboratory and Envera LLC. <i>Diane Kapareiko</i>	Mechanizing Oystergro cage flipping <i>Jeff Auger</i>	Temperature tolerance of a candidate sea vegetable crop, <i>Alaria esculenta</i> <i>Charlotte Quigley</i>	Discussion on how to catch and prosecute those poachers!	
11:45 AM	Maine oyster pathogen zonation <i>Cem Giray</i>	Gauging the current impact of blister worm on the Northeastern oyster culture industry <i>Paul Rawson</i>	Drying temperature, humidity and time effects on the physico-chemical properties of sugar kelp ( <i>Saccharina latissima</i> ) <i>Praveen Sappati</i>		
12:00 PM	Lunch in the Narragansett Ballroom				

	Bristol/Kent	Newport/Washington	Providence II/III	Providence I/IV	South County
	<b>Aquaculture Student Roundtable</b>	<b>Developing a Public Relations and Media Relations Plan for Aquaculture Business</b>	<b>Mussel Farming and Seed Production</b>	<b>Ocean Acidification</b>	<b>Shellfish Disease Diagnostics</b>
	<i>Chair: Charlotte Quigley</i>	<i>Chair: Erich Luening</i>	<i>Chair: Scott Lindell</i>	<i>Chair: Joe Salisbury</i>	<i>Chair: Dale Leavitt and Roxanna Smolowitz</i>
1:30 PM	<p>We invite all undergraduate and graduate students, and postdoctoral researchers to join in an academic discussion concerning aquaculture. Topics may include selecting candidate species/crops, sea farm engineering, carrying capacity of aquaculture systems, product development, and how aquaculture will affect coastal communities. This session will follow a loose agenda, but will offer flexibility to change the course of the conversation to ensure equal participation of contributors on topics of interest to the group.</p>	<p>One of the challenges facing aquaculture professionals is explaining what they do, how they do it, and what they hope to bring to market to customers, business associations, and regulators. The message is as important as the product one grows and sells. In this session, table top attendees can discuss and learn ways to communicate their message effectively to the seafood industry through media channels and also with unique channels to the customers.</p>	<p>Conditioning of blue mussel (<i>Mytilus edulis</i>) broodstock using microalgal and alternative diets <i>Paul Rawson</i></p>	<p>Ocean acidification: What is it, why does it matter, and how can it be measured? <i>Christopher Hunt</i></p>	<p>This hands-on laboratory will provide both practical experience and useful knowledge to culturist. In the first session, participants will examine the anatomy of 3 important bivalves, eastern oysters, surf clams (as a proxy for hard clams), and sea scallops. Participants will learn how to identify disease abnormalities and evaluate the animal's condition. The how and why of sample submission to a diagnostic lab will be discussed.</p>
1:45 AM			<p>Optimal methods for setting blue mussel (<i>Mytilus edulis</i>) spat in a hatchery <i>David Bailey</i></p>	<p>Can growing sugar kelp locally remediate ocean acidification? <i>Susie Arnold</i></p>	
2:00 AM			<p>Effects of selective breeding and different settlement substrate on growth, survival and field retention of hatchery-reared blue mussel (<i>Mytilus edulis</i>) seed <i>Kyle Pepperman</i></p>	<p>Determination of the threshold carbonate chemistry parameters for juvenile eastern oyster calcification <i>Meredith White</i></p>	
2:15 AM			<p>Remote-setting eyed larvae of the blue mussel, <i>Mytilus edulis</i>, for seed production <i>Emma Green-Beach</i></p>	<p>A comparison of calcium carbonate sediment buffers to increase the larval settlement of the soft shell clam <i>Mya arenaria</i> <i>Chris Schillaci</i></p>	
2:30 AM			<p>Evaluation of a submersible mussel raft for use in semi-exposed sites <i>Tobias Dewhurst</i></p>	<p>Promoting market growth for shellfish through climate change activism <i>Bill Mook</i></p>	
2:45 AM			<p>An economic assessment of blue mussel (<i>Mytilus edulis</i>) seed production <i>Scott Lindell</i></p>	<p>Enhanced susceptibility to microbial infections in bivalve larvae and juveniles exposed to acidified seawater <i>Michelle Barbosa</i></p>	
3:00 PM	Break in the Foyer				
	<b>Real-time Environmental Forecasting Workshop</b>	<b>Risk Management: How does it work?</b>		<b>Scallop Aquaculture Forum</b>	<b>Shellfish Disease Diagnostics</b>
	<i>Chair: Donald Berchoff</i>	<i>Chair: Paul Russell</i>		<i>Chair: Hugh Cowperthwaite</i>	<i>Chair: Dale Leavitt and Roxanna Smolowitz</i>
3:30 PM	<p>The Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS) and TruWeather Solutions, a private weather and water information services company, have partnered up to address water issues facing the aquaculture industry. Through the use of state-of-the-art environmental monitoring and models, an early warning system for shellfish growers and managers (including parameters such as harmful water quality conditions, predicted harmful temperature changes, weather, and others to be defined by the aquaculture community), can be delivered directly to mobile devices in the most efficient and easy-to-use formats to reduce risk and improve results for aquaculture growers. The workshop will show attendees capabilities and get feedback on priorities from potential users to create a useful product.</p>	<p>Risk management programs are often too confusing, leaving growers confused and feeling left out. This session aims to combat that problem by highlighting programs available to growers – utilizing both a presentation and a panel format in which growers will discuss their personal experiences. Finally, a panel of decision makers will address their role in setting policy, prices and rates for the USDA Farm Service Agency (FSA) and how the shellfish industry can be involved in these decisions.</p>		<p>This seminar will provide an overview of scallop aquaculture efforts in Maine of the past 18 years. Participants will gain a better understanding of progress made regarding wild spat collection and various grow out techniques. Emphasis will be placed on current efforts that are underway in Maine to develop a robust scallop aquaculture industry for growers including techniques recently learned from Aomori, Japan.</p>	Continuation of this workshop
3:45 AM					
4:00 AM					
4:15 AM					
4:30 AM					
4:45 AM					
5:00 PM	Closing Refreshments by Registration Area				