



Est. 1908

# National Shellfisheries Association Quarterly Newsletter

2020 (3)

## President's Message



There are good days ahead! Even as we deal personally or professionally with extreme weather events, social unrest, and uncertainty. As scientists, regulators, technicians, culturists, harvesters, and students we are challenged by uncertainty almost daily. Developing solutions

to short-term and long-term uncertainty (challenges, questions) is what we do.

I am sure each of you has moved forward, and will continue to do so, with new ideas and actions to overcome your own personal and professional challenges. What has the Association been doing to meet its challenges? The NSA Executive Committee and The Recruits drafted a code of ethics and conduct for our Association. An ad hoc committee created a draft plan for improving our financial security. The Conference Manager is moving ahead with 2021 meeting logistics and planning for alternatives if needed.

Yes, the 113th Annual Meeting is to take place from 21-26 March in Charlotte, North Carolina. Abstracts may not be due until December 15 but making arrangements started last year. You should be thinking about the 113<sup>th</sup> Annual Meeting and checking the NSA home page for more information. If you have an idea for a new session, contact conference manager Dr. Sandra Shumway for instructions on what you need to do. Our sponsors have stayed with us from last year and I expect you are looking forward to meeting your colleagues and friends again at a great venue.

You might be thinking I am being optimistic for our annual meeting. I am optimistic about most things as I have seen positive results, even those that may take

decades. I am optimistic because collectively we make changes as needed. The Association has evolved over its 113 years and will continue to evolve as needed, because its members care. Members are what make this Association what it is and where it will go. The Membership Committee worked hard to contact those members that missed paying dues last year. With the Baltimore meeting cancelled many forgot and were caught up in their challenges at the time. The Association needs its members now more than ever. Requests for recruiting new members seem to fall short each year. This is your time to recruit or sponsor that new member to ensure our Association is strong for meeting future challenges in shellfisheries.

Let us continue to make contributions to shellfisheries and the Association by publishing your research findings in our journal, recruiting new members, and assisting the Association in any manner you can.

**John Scarpa, President**

### *In this issue:*

- **113<sup>th</sup> Annual Meeting Charlotte 2021**
- **NSA Award Deadlines**
- **FUCOBI Foundation Student Sponsorship Opportunity**
- **JSR wins Apex Award**

## Sponsorship Opportunities for Minority Students



The FUCOBI Foundation has announced two research and travel awards for minority students from Latin America and the Caribbean, the United States (Puerto Rico, Native Americans, and the Pacific Islands), and African countries to attend the 113<sup>th</sup> Annual Meeting in

Charlotte. The **Johnnie Castro Montealegre Travel Award** will cover airfare (within the USA only), meeting registration fee, hotel, travel costs, meals, and poster printing. The **Jimmy Alcivar-Arteaga Research and Travel Award** will cover airfare, travel, meals, poster printing, and meeting registration fee. **Application deadline is October 1<sup>st</sup>, 2020.**

Students interested in applying for the Johnnie Castro Montealegre Travel Award, please contact [FUCOBII@gmail.com](mailto:FUCOBII@gmail.com) to request an application. Please also include your CV and an abstract with all co-authors (ready for submission to the NSA annual meeting, 250-words).

Students interested in applying for the Jimmy Alcivar-Arteaga Research and Travel Award, please contact [FUCOBII@gmail.com](mailto:FUCOBII@gmail.com) to request an application. There are thirty awards available. Please include an abstract with all co-authors (ready for submission to the NSA annual meeting, 250-words). Abstracts submitted on the following topics will be given priority, but awards are not limited to these topics: 1) Metals, glyphosate, Roundup, and bisphenol in mangrove sediment near banana and shrimp farms, and in cow's milk, cheese, and agricultural soil; 2) Toxicological transgenerational epigenetic inheritance (F0-F3) to assess health risks caused by exposure to glyphosate and Roundup to marine animals (shrimp, molluscs) and people who live near estuaries and wetlands; 3) Glyphosate-free aquaculture feeds; and 4) Glyphosate-free shrimp.

This is a great opportunity for NSA student members. The Johnnie Castro Montealegre Travel Award was presented to Melissa Pierce at the 108<sup>th</sup> Annual Meeting for her project 'Bivalves maintain a core gut micro biome: seasonal trends and species variation', to Amanda Zahorik at the 109<sup>th</sup> Annual Meeting for her project 'The oyster microbiome: interrelationships among host genotype, microbiome composition, and disease resistance in *Crassostrea virginica*', and to Natalie Lowell for her project 'Population genetics of two emergent shellfish aquaculture species and implications for genetic risk assessments' at the Triennial in 2019. Students are encouraged to apply! Information is also available on the NSA website: [www.shellfish.org](http://www.shellfish.org).

## Award Deadline November 1<sup>st</sup>

Nominations for:

- Honored Life Member Award
- David H. Wallace Award
- Neil Bourne - Ken Chew Award
- Paul Galtsoff Industry Award

Visit [www.shellfish.org](http://www.shellfish.org) for specific award descriptions and instructions

Send nominations to the  
Chair, Past-Presidents Committee:  
Steve Allen, [sallen@bowdoin.edu](mailto:sallen@bowdoin.edu)

## Student Research Grant Awards:

- Melbourne R. Carriker Award
- Michael Castagna Award
- George R. Abbe Award

Applications are available at:

[www.shellfish.org](http://www.shellfish.org)



## Charlotte or Bust!

Obviously these are difficult and uncertain times and we are planning for all contingencies, but current plans are moving forward for the 113<sup>th</sup> Annual Meeting in Charlotte, NC - March 21-25, 2021. Many of the sessions that were planned for Baltimore have been rescheduled for this meeting and a few new ones have been added to the schedule - check out the latest listings on the web page: [www.shellfish.org](http://www.shellfish.org). There is still time to add a session should anyone be so inclined.

### ABSTRACT DEADLINE: DECEMBER 15, 2020

We are planning all of the usual activities - the opening reception, auction, business luncheon, student breakfast, Scallop Gallop, and lots of student activities. Bring your auction items (or send ahead to Sandy), we'll be doubling up on that activity to keep the SEF solvent.



Photo credit: <https://www.flickr.com/photos/digidreamgrafix/>

Charlotte is a new destination for us and promises to be a lot of fun. It is a hub for several airlines and spring should be in full bloom. Plan some time to enjoy the local attractions: the US National Whitewater Center, a golf complex with indoor options, and the Epicentre with outstanding restaurants, cafes, and entertainment. And for all of you NASCAR fans - the Hall of Fame is close by the hotel!

It's been a long time since we were all together and there will be a lot of catching up to do. It will be refreshing to sit in an actual meeting not hosted by Zoom. The NSA needs your support now more than ever, so make your travel plans early. And don't forget that FUCOBI is offering sponsorship for minority students (see page 2) – the deadline for application is October 1<sup>st</sup>, 2020.

Remember that the Student Travel Awards are chosen by a lottery system. Please visit [www.shellfish.org](http://www.shellfish.org) to fill out a lottery application. Applications are due December 15<sup>th</sup>, 2020. If you have any questions, please contact Melissa Southworth ([melsouth@vims.edu](mailto:melsouth@vims.edu)).

Looking forward to seeing everyone in Charlotte.

Any questions or suggestions, contact the Conference Manager at: [sandra.shumway@uconn.edu](mailto:sandra.shumway@uconn.edu)

## Seeking Authors for Biographies for Honored Life Members

This is an on-going plea to get biographical information for Honored Life Members posted on our web page. Thanks to Val Hall for preparing a bio of David Belding, which is now posted and will appear in the *Newsletter* at a later date. Kay McGraw has volunteered to prepare a piece on her major advisor, Gordon Gunter. We are still seeking bios for the following individuals, several of whom are the namesakes of our major awards. All of these individuals deserve recognition and newcomers to the field should have the opportunity to learn of their contributions. It's not an onerous undertaking and can be fun – please give it some thought. If you are interested in doing some digging and writing a short biography on any of these folks, please get in touch with Sandy Shumway ([Sandra.shumway@uconn.edu](mailto:Sandra.shumway@uconn.edu)). The article does not have to be long, just informative. Some information can be found in *Taming of the Oyster* and contacting individuals who knew the members could also prove rewarding.

Jarvey W. Wiley

Sewell H. Hopkins

Hugh Smith

Robert Lunz

R.E. Coker

Ronald Westley

J.L. McHugh

Walter A. Chipman

Wesley Coe

A.F. Chestnut

H. Butler Flower

Robert Ingle

Trevor Kincaid

Pieter Korringa

Philip Butler

Paul S. Galtsoff

Cedric Lindsay





## In Memoriam

Carl N. Shuster, Jr.

November 16, 1919 – May 28, 2020

Author of *The American Horseshoe Crab* and leading authority on *Limulus polyphemus* passed away a few months ago. His obituary can be found at: <https://www.dignitymemorial.com/obituaries/arlington-va/carl-shuster-9201258>



## Become a Member of the Aquaculture Association of Canada

- AAC Watermark / Digital Conference Bulletins
- World Aquaculture Magazine
- Registration Discounts - Aquaculture Canada & World Aquaculture Society conferences
- Free job postings on our website
- Student Awards and Scholarships
- Networking & Mentorship, Lifelong Connections through Conferences and Workshops
- **PLUS** Discounted rates to Aquaculture North America and Hatchery International

For more information, call (709)631-3207 or email Miranda Pryor ([info@aquacultureassociation.ca](mailto:info@aquacultureassociation.ca)) or visit [www.aquacultureassociation.ca](http://www.aquacultureassociation.ca)

AAC is a registered charity with a mandate to transfer information between the various sectors of the aquaculture community. We organize workshops and conferences and support students through scholarships, travel bursaries, and other awards.



Find us on Facebook or Instagram.

## \$\$\$ for NSA just by using BioOne!!

Did you know that NSA receives royalties every time you download an article from the *Journal of Shellfish Research (JSR)* on your institutional BioOne website?

The National Shellfisheries Association (NSA) joined BioOne in 2007. This means that all *JSR* articles since 2005 are available digitally for downloading on the BioOne website. Moreover, when NSA members access and download *JSR* articles **from your institution's website**, NSA receives royalties for each download. This represents an important source of revenue for the Association that currently helps to offset about 50% of the operating costs for journal production. In 2018, NSA received just over \$80,000 in revenue. This is obviously critically important to the financial security of the NSA.

So what can you do? By regularly downloading *JSR* articles and encouraging other members to download articles, this will further help to support the NSA and the ongoing production of our high quality journal! Accessing Journal **through your library** means that, in addition to the royalty from BioOne, the library knows you want them to continue your access to it.

So remember, while NSA members, whose dues are paid can access the BioOne site via the NSA website, it is in the best interests of NSA for you to access BioOne via your library's portal. If your institution does not subscribe to BioOne.2 or BioOne Complete, please encourage them to do so. "Downloads" from institutional libraries (but not the NSA website) count when it comes to royalties. Because BioOne is a non-profit organization, most of the money that it receives from subscriptions is returned to the publishing societies. **USE BIOONE OFTEN!**

Jay Parsons, NSA Treasurer  
John Kraeuter, NSA Co-Chair  
Publications Committee



## The Journal of Shellfish Research was awarded its 12<sup>th</sup> APEX Award for Publication Excellence!



## The ONE HEALTH Epigenomics Program of the FUCOBI Foundation of Ecuador



ONE HEALTH is a collaborative, multi-sectoral, and trans-disciplinary approach - working at local, national, and global levels – to achieve optimal health and well-being outcomes through recognizing the interconnections between people, animals, plants, and their shared environment ([www.onehealthcommission.org](http://www.onehealthcommission.org)). The ONE HEALTH concept originated in medical and veterinary spheres as an open call for collaboration between these disciplines or professions and those of environmental and social science, but the inclusion of environmental science has thus far proven weak and suggestions were made to address inter- and trans-disciplinary solutions aimed at improving management of health risks and benefits associated with nature.

In Ecuador, environmental, animal and human health issues are being addressed through the program 'UNA SALUD / ONE HEALTH Epigenomics and Microbiomes: Somos lo que comemos / We are what we eat' funding by the FUCOBI Foundation ([www.fucobi.org](http://www.fucobi.org)). The long-term goal is to conserve healthy terrestrial and aquatic ecosystems (agricultural soil, rivers, mangroves, wetlands), to maintain healthy animals (shrimp, molluscan shellfish, and fish), to ensure the long-term health of the people. The program includes three epigenomics projects: ShrimpENCODE, MangroveENCODE, and ChildrenENCODE. Collaborators include local citizens and international experts on mangrove conservation genomics, CO<sub>2</sub>, and climate change; epigenetics and transposable elements (TE); crustacean biologists and ecologists; veterinarians with expertise in zoonotic diseases; genetic epidemiology, antimicrobial resistance and public health; endocrine disrupting chemicals (EDC) associated with chronic diseases such as diabetes, obesity, cancer, neural tube defects (NTD); toxicologists and water sanitation experts, among others. Ecuador is a major shrimp producing country in the Western Hemisphere. Mangroves from the provinces of Guayas and El Oro have disappeared since 1969 by being converted into shrimp farms where the shrimp is exposed to glyphosate (airplane sprayed)-contaminated water from the nearby banana plantations.

Highlighted below are examples of our research projects.

### ShrimpENCODE:

- assembling a new reference genome from specific pathogen-free (SPF) *Penaeus vannamei* from the USA (genome size ~2.8 Gb);
- transposable elements of *Penaeus* shrimp and oysters ([www.girinst.org](http://www.girinst.org));
- bacterial genes in the shrimp genome;
- epigenetic genes in *P. vannamei* genome;
- endogenous white spot syndrome virus (WSSV) in the shrimp genome (WSSV-ERV, *DNAV-1\_LVa*);
- endogenous virus *Nimav-1\_LVa* in *P. vannamei* and other penaeids;
- *NonLTR-1\_LVa* non-LTR retrotransposon and abdominal segment deformity disease (ASDD);
- microbiomes, antimicrobials, herbicides (glyphosate/Roundup), insecticides (*Bacillus thuringiensis*) in shrimp and molluscan shellfish;
- glyphosate-free shrimp and aquaculture feeds;
- *Vibrio parahaemolyticus* and *Vibrio* spp. associated with infectious AHPND disease;
- horizontal plasmid transfer between *V. parahaemolyticus* as a novel mechanism for genetic exchange and environmental adaptation mediated by the insertion sequence ISVal1;

### MangroveENCODE:

- taxonomy of mangrove species from coastal provinces and the Galapagos Islands of Ecuador;
- mangrove reforestation to reduce carbon emissions from coastal ecosystems (Blue Carbon);
- EDC like metals, glyphosate/Roundup, bisphenol a (BPA), PCB, PAH; and insecticides like *Bacillus thuringiensis* (*Bt*) and others in mangrove sediment adjacent to banana plantations and shrimp farms, molluscan shellfish, fish, agricultural soil, cow's milk, cheese, and people from the mangroves.

So far, over 30 students, postdoctoral/research associates, university professors, and NGO representatives will present at the NSA meeting in Charlotte with travel scholarships to students and invited speakers supported by Environmental Genomics Inc. of MA. These sponsorships have also resulted in the recruitment of new NSA members. Participants represent 10 countries (Belgium, Bangladesh, China, Ecuador, India, Iraq, Malaysia, Mexico, Nigeria, Philippines, USA). Since there is limited inspection to detect contaminants in shrimp sold at US supermarkets, speakers will address the promises and challenges of toxico-epigenomics; environmental chemicals, and their impacts on shrimp, molluscan shellfish and people epigenomes. For more information about two Research and Travel scholarships for minority students to attend the NSA meeting in Charlotte, North Carolina, please contact Dr. Acacia Alcivar-Warren, Coordinator of the ONE HEALTH program, at [fucobi@gmail.com](mailto:fucobi@gmail.com) (also see Page 2).

**Dr. Acacia Alcivar-Warren**



## Recruits' Corner

Fellow Recruits,

Welcome back to the fall semester! We hope that you have been able to find a balance between staying safe and being productive during the recent months of the coronavirus pandemic and new wave of social justice protests across the country.



The NSA EXCOM has created a Diversity Committee to continue the NSA tradition of being a welcoming and inclusive society to all. At the student level, we have created a new Inclusion, Diversity, and Equity Actions Student (IDEAS) subcommittee which is just getting started. Please email Alex or

Hannah if you'd like to participate.

The deadline for NSA Research Grants is quickly approaching. Submit your applications by **November 1<sup>st</sup>, 2020**. Three awards provide \$1,250 toward all aspects of shellfish biology, fisheries, aquaculture, and management. We encourage you to apply and why wait until November - start working on your applications now! Application information is available on the webpage ([www.shellfish.org/student-members](http://www.shellfish.org/student-members)).

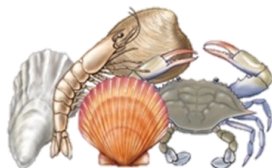
The SEF Travel Award application deadline is also approaching. Travel awards provide support for lodging, registration, or travel for students attending the NSA 2021 Meeting in Charlotte, North Carolina, March 21<sup>st</sup> - 26<sup>th</sup>. Remember, it is now a lottery system and if you have any questions, contact Melissa Southworth ([melsouth@vims.edu](mailto:melsouth@vims.edu)). **Applications are due December 15<sup>th</sup>** - the same day abstracts are due. To be eligible, you must be a current NSA member and be presenting original research (poster or talk) at the annual meeting.

Stay on top of all things NSA through the student member website page ([www.shellfish.org/student-members](http://www.shellfish.org/student-members)), the NSA Student Facebook Group (<https://www.facebook.com/groups/2216454881732029>), and on Instagram (@nationalshellfisheries). Don't forget to send Hannah or Alex research updates from the past few months to be featured on the Instagram monthly student showcase!



Please email Hannah Collins ([hannah.i.collins@uconn.edu](mailto:hannah.i.collins@uconn.edu)) or Alexandria Marquardt ([armarquardt@vims.edu](mailto:armarquardt@vims.edu)) with any questions or updates.

Wishing you a safe start to the semester!  
**Hannah and Alexandria**



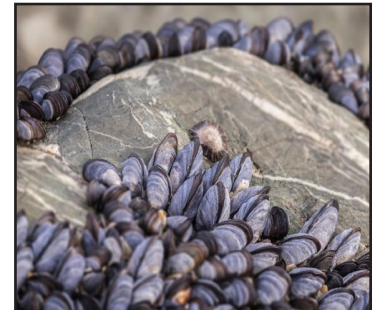
## Human link surmised in spread of infectious cancer in mussels

In a paper published by Yonemitsu *et al.* (2019) in the journal *eLife* suggests that transmissible cancers are more common than previously believed—especially in the ocean affecting mussels, clams and cockles. This new field of research could help us better understand how cancer develops in both animals and humans, as well as illuminate the murky lives of marine creatures.

Since 2014, a related species, the blue mussel (*Mytilus edulis*), has experienced mass die-offs in France. These events show signs of being caused by a transmissible tumor. A team led by Michael Metzger at the Pacific Northwest Research Institute in Seattle, Washington, sequenced DNA found in blue mussels from France and the Netherlands, and identified tumor cells with genetic markers characteristic of bay mussels.

Most often, cancer arises from DNA mutations in an organism's cells, leading to uncontrolled cell growth — it does not normally spread from one organism to another, although it can. "Tasmanian devils, dogs and bivalves have all developed cancers that can spread to others, acting more like a pathogen or parasite," lead author Marisa Yonemitsu, Research Technician at the Pacific Northwest Research Institute in Seattle, Washington, said in a summary of the study findings.

To find out, a team led by Michael Metzger at the Pacific Northwest Research Institute in Seattle, Washington, sequenced DNA found in blue mussels from France and the Netherlands, and identified tumor cells with genetic markers characteristic of bay mussels. The aim was to establish whether their cancers were transmissible and of the same line as that found in *M. trossulus*, or if these species had transmissible cancers of their own.



Blue mussels, photo credit: Alamy

The researchers also found that Chilean mussels (*Mytilus chilensis*), a species from Argentina and Chile, had tumours that were almost genetically identical to those afflicting the European blue mussels. The tumors originated in a single bay mussel and then spread to the South American and European mussel species — probably via international shipping vessels, the researchers suggest.

To find out more about this study and the Metzger Lab:

Yonemitsu, M.A., Giersch, R.M., Polo-Prieto, M., Hammel, M., Simon, A., Cremonte, F., Avilés, F.T., Merino-Véliz, N., Burioli, E.A., Muttray, A.F., Sherry, J., Reinisch, C., Baldwin, S.A., Goff, S.P., Houssin, M., Arriagada, G., Vázquez, N., Bierne, N., Metzger, M.J. 2019. A single clonal lineage of transmissible cancer identified in two marine mussel species in South America and Europe. *Elife*, 5; 8. doi: 10.7554/eLife.47788.

<https://www.pnri.org/research/labs/metzger-lab/metzger-lab-publications/>



# Officers, Committee Chairs & Staff of the National Shellfisheries Association

John Scarpa  
President  
Texas A&M University - Corpus Christi  
Dept. of Life Sciences  
6300 Ocean Drive (Unit 5800)  
Corpus Christi, TX 78412  
Phone: (361) 825-2369  
Email: john.scarpa@tamucc.edu

Lewis Deaton  
President - Elect  
University of Louisiana - Lafayette  
P.O. Box 42451  
Lafayette, LA 70504  
Phone: (337) 482-6549  
Email: led9784@louisiana.edu

Aswani Volety  
Vice-President  
Elon University  
2200 Campus Box  
Elon, NC 27244  
Email: avolety@elon.edu

Jay Parsons  
Treasurer  
Aquaculture, Biotechnology & Aquatic Animal  
Health Sciences  
Fisheries and Oceans Canada  
200 Kent Street, Stn. 12E241  
Ottawa, ON Canada K1A 0E6  
Phone: (613) 990-0278  
Email: Jay.Parsons007@gmail.com

Paul Rawson  
Secretary  
University of Maine  
5751 Murray Hall  
Orono, ME 04469  
Phone: (207) 581-4326  
Email: prawson@maine.edu

Steven M. Allen  
Past-President  
Chair, Past-Presidents', Elections, Awards  
Committee; Membership Committee  
Bowdoin Coastal Studies Center  
15 Bowdoin St  
Brunswick, ME 04011  
Phone: (443) 994-5164  
Email: sallan@bowdoin.edu

Melissa Southworth  
2018-2021 Member-at-Large  
Co-Chair, Student Endowment Awards  
VIMS  
PO Box 1346  
1208 Greate Rd  
Gloucester Point, VA 23062  
Phone: (804) 684-7821  
Email: melsouth@vims.edu

Michael Doall  
2019-2022 Member-at-Large  
Membership Committee  
Stony Brook University  
162 Soundview Dr.  
Rocky Point, NY 11778  
Phone: (631) 418-4249  
Email: michael.doall@stonybrook.edu

Louis Plough  
2020-2023 Member-at-Large  
Membership Committee  
University of Maryland Center for Environ. Sci.  
Horn Point Laboratory  
2020 Homs Point Rd  
Cambridge, MD 21613  
Phone: 410-221-8474  
Email: lplough@umces.edu

P. Sean MacDonald  
Chair, Pacific Coast Section  
University of Washington  
Box 355679  
Seattle, WA 98195-5679  
Phone: (206) 616-2186  
Email: psean@uw.edu

Sandra E. Shumway  
Editor, *JSR*; Conference Manager  
Chair, Membership Committee  
University of Connecticut  
Dept. of Marine Sciences  
1080 Shennecossett Road  
Groton, CT 06340  
Phone: (860) 405-9282  
Email: sandra.shumway@uconn.edu

John N. Kraeuter  
Chair, Audit-Budget-Finance Committee  
Co-Chair, Publications Committee  
1 Hills Beach Road  
Biddeford, ME 04005  
Email: kraeuter@hsrl.rutgers.edu

Lou D'Abramo  
Co-Chair, Publications Committee  
University of Alabama Birmingham  
3366 Beaver Creek Drive SE  
Southport, NC 28461  
Phone: (662) 617-0257  
Email: lrd4@msstate.edu

Peter Kingsley-Smith  
Co-Chair, Student Endowment Awards  
Marine Resources Research Institute  
South Carolina Dept. of Natural Resources  
217 Fort Johnson Road  
Charleston SC 29412  
Phone: (843) 953-9840  
Email: kingsleysmithp@dnr.sc.gov

Hannah Collins  
Recruits, Co-Chair  
University of Connecticut  
11 Hynes Ave, Apt. 2  
Groton, CT 06340  
Email: hannah.i.collins@uconn.edu

Alexandria Marquardt  
Recruits, Co-Chair  
VIMS  
PO Box 1346  
1208 Greate Rd  
Gloucester Point, VA 23062  
Email: armarquardt@vims.edu

LeRoy Creswell  
Editor, *NSA Quarterly Newsletter*,  
Co-Chair, Student Endowment Awards  
Florida Sea Grant Extension Program  
2199 South Rock Road  
Ft. Pierce, FL 34945  
Phone: (772) 834-9062  
Email: creswell@ufl.edu

Noreen Blaschik Favreau  
Associate Editor, *NSA Quarterly Newsletter*  
Webmaster  
University of Connecticut  
Dept. of Marine Sciences  
1080 Shennecossett Rd  
Groton, CT 06340  
Email: noreen.blaschik@uconn.edu

Linda Kallansrude, *Secretariat*  
9306 Knight Rd  
Bonito Springs, FL 34135  
Phone: (239) 676-5685  
Email: lindajk@optonline.net



Linda Kallansrude, NSA Secretariat  
9306 Knight Rd  
Bonito Springs, FL 34135  
*Forwarding Service Requested*

## Upcoming Events

**74<sup>th</sup> Annual Shellfish Conference** (NSA-PCS/PCSGA): Oct. 6-8, 2020. Wenatchee, WA. For more information: <https://pcsga.org/annual-conferences>

**5<sup>th</sup> World Conference on Marine Biodiversity:** December 13-16, 2020. Auckland, Australia. For more information: <https://www.wcmb2020.org/>

**Aquaculture America 2021:** Feb. 21-24, 2021. San Antonio, TX. For more information: [www.was.org](http://www.was.org)

**113<sup>th</sup> Annual NSA Meeting:** Mar. 21-26, 2021. Charlotte, North Carolina. For more information: [www.shellfish.org](http://www.shellfish.org)

**Aquaculture Europe 2021:** Apr. 12-15, 2021. Cork, Ireland. For more information: [www.aquaeas.org](http://www.aquaeas.org)

**23<sup>rd</sup> International Pectinid Workshop:** Apr. 28 - May 4, 2021. Douglas, Isle of Man. For more information: [www.internationalpectinidworkshop.org](http://www.internationalpectinidworkshop.org)

**Physiomar 2021:** Sept. 7-10, 2021. Nelson, New Zealand. For more information: <https://confer.eventsair.com/physiomar-2020/>

**Aquaculture Canada/WAS North America 2021:** Sept 26-29, 2021. St. John's, Newfoundland, Canada. For more information: [www.was.org](http://www.was.org)

**Aquaculture Europe 2021:** Oct. 5-8, 2021. Funchal, Madeira, Portugal. For more information: [www.aquaeas.org](http://www.aquaeas.org)

**Aquaculture 2022:** Feb. 27-Mar 3, 2022. San Diego, CA. For more information: [www.was.org](http://www.was.org)

**Aquaculture America 2023:** Feb. 19-22, 2023. New Orleans, Louisiana. For more information: [www.was.org](http://www.was.org)

If you would like to announce a meeting, conference, workshop, or publication that might be of interest to NSA members, please contact the *QNL* Editor, LeRoy Creswell ([creswell@ufl.edu](mailto:creswell@ufl.edu)).