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National Shellfisheries Association Quarterly Newsletter

2023(2)

President's Message



Years ago, as a young student researcher at the Virginia Institute of Marine Science, I decided to delve into shellfish and their foundational role in the quality of our water and the health of our oceans. My first NSA meeting was 30 years ago! I distinctly remember going to Portland with Dr. Fu-Lin Chu, my Ph.D. advisor from VIMS – excited, nervous, and scared. I remember dressing up for my presentation, volunteering at the front booth, operating AV projectors, and participating in the Student Auction.

I have been to many professional meetings since then, but every one of them pales in comparison to the NSA meetings as far as networking and mentoring goes. As soon as I attended my first NSA, I knew I wanted to be more involved with this fantastic group of experts. I continued my work with shellfish at the US Environmental Protection Agency, Florida Gulf Coast University, and University of North Carolina Wilmington – aided by several mentors and collaborators throughout the globe.

I had the privilege of working with and learning from the NSA community comprised of students, faculty, researchers, industry partners, and governmental agencies. The combination of your expertise, confidence, and camaraderie inspired me then and continues to impress me today. I am honored by the opportunity to serve as your NSA President. I am following in the footsteps of many dedicated leaders, including my immediate predecessor, Dr. Lewis Deaton. I am grateful to each one of them for their service and support.

I look forward to working with the members of this organization to advance shellfish research and advocate for resource management practices that balance environmental conservation with economic growth. From cutting-edge scientific discovery to innovative farming techniques, the National Shellfisheries Association proudly highlights the work of experts who are pushing the boundaries of what is possible in this exciting field.

According to the United Nations, nearly 2.4 billion people worldwide live within 60 miles of the ocean. The work that the NSA members, like you, engage in each day makes an impact on our world – in a big way. As the legendary oceanographer Sylvia Earle succinctly said: “No water, no life. No blue, no green.”

I want us to dream together to see how we can help our students, scientists, and the industry thrive in the future. As I look ahead, I want us to imagine:

- A graduating, career-ready student who is an engaged and informed global citizen – greater collaborations with scientists across the continent and the globe
- Expanding the outreach of this Association to parts of the world we haven't touched as much
- An unparalleled collaboration with industries
- A strong endowment fund where we can provide support for students in need so that they can attend conferences, fund their research, and exchange ideas with other members

In this *Newsletter*, you will find a wealth of information to enhance your work and support your connections within the shellfishery community. What would you like to see more of? What is your favorite section of the *Newsletter*? What, if anything, would you change? I welcome your input and I look forward to seeing many of you at our 116th NSA Annual Meeting on March 17-21, 2024, in Charlotte, North Carolina, my home state.

By sharing knowledge and working together, we can create a more sustainable and prosperous future for all of us, shellfish and humans alike. Thank you for your continued interest in NSA and for your commitment to the health of our oceans and coastal communities.

Yours in service,

Aswani K. Volety, President

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'Alien goldfish' with Toothy Tongue a Unique Mollusc?

The mystery of a bizarre creature dubbed the 'alien goldfish', has baffled fossil experts for decades. Its features include a rugby ball-shaped body (up to 90 mm or 3.5 in long), a fin on its back end, neither a backbone nor an anus, and lacks a shell. The anatomy of *Typhloesus* left scientists confused as to where it belonged on the tree of life.



An artistic representation of *Typhloesus wellsi* hunting prey. (Image credit: Drawing by Joshua Knüppe, Royal Ontario Museum.)

Living about 330 million years ago, *Typhloesus wellsi* was discovered in the Bear Gulch Limestone fossil site in Montana in the late 1960s.

The discovery of tiny teeth within *Typhloesus* fossils that eventually turned out to be the remains of a last meal of tiny, eel-shaped, extinct fish known as conodonts, added to the confusion. But the researchers say a toothy structure found in the animals' gut may help clear up the confusion.

The researchers proposed in the recent study published in [Biology Letters](#), that *T. wellsi* was an early gastropod, which is the group of molluscs that includes modern snails and slugs, because many of these living species extend their foreguts to grasp prey. "It's the discovery of this radula-like structure, which we suggest is the really crucial piece of evidence," said Simon Conway Morris, an emeritus professor of paleobiology at the University of Cambridge.

The 4 mm-long structure is comprised of two rows of about 20 triangular teeth, curved backwards. "An analogy here [is] the tongue of a lizard, for example, capturing an insect. It is very quick and it brings food inside the mouth," said Dr Jean-Bernard Caron, a co-author of the research from the Royal Ontario Museum, adding that as well as consuming conodonts, it is possible *Typhloesus* ate algae from the sea floor.

The taxonomic status of *T. wellsi* is still up for debate. Mark Purnell, a professor of palaeobiology at the University of Leicester in England, told *The Guardian* that the presence of a radula does not definitively declare the species to be a mollusc, because animal lineages can evolve radula-like features independently from one another.

Abstracted from *The Guardian*, September 21, 2022.

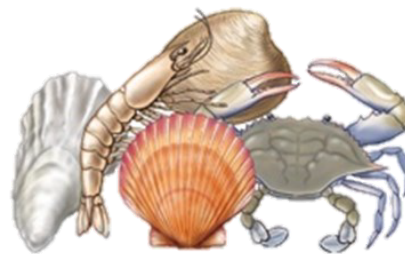
2023 NSA Resolutions

Each year, the National Shellfisheries Association recognizes individuals for special contributions to the society in the form of Resolutions. Each begins with the same introduction:

Whereas, the National Shellfisheries Association, Inc. (NSA) is a Not-for Profit Corporation, and Whereas, members serve as officers and committee members on a voluntary basis, Be It Resolved that on the 29th of March, 2023, the National Shellfisheries Association formally recognizes and thanks:

This year, the following Resolutions were presented.

- **John Scarpa:** for his multiple years and tireless service as Editorial Board member, Membership Committee Co-Chair, Treasurer, President-Elect, President, and Past President. We wish him well on his new adventures!
- **Kenneth Chew:** for an extraordinary career in shellfish research, aquaculture, and education, and for his patience and teaching as he guided future generations. His impacts and influence on the field, and especially on the National Shellfisheries Association, are immeasurable and gratefully acknowledged.
- **Patricia Palmere, Markus Addison, Chef Jerome Talley, Rhondra Avery, LaMar Lynch and the extraordinary staff of the Baltimore Marriott Inner Harbor at Camden Yards:** for their outstanding assistance in making the 115th annual meeting of the National Shellfisheries Association a great success. Everyone went 'above and beyond' and their professionalism, attention to details, and friendliness were instrumental in making the meeting memorable. WE THANK THEM ALL FOR THEIR OUTSTANDING EFFORTS!
- **Sheridan Press:** for their 37th year of outstanding service and collaboration publishing the *Journal of Shellfish Research*. We especially recognize Joyce Coulter, Susan Parente, Cindy Fullerton, and Jeannie McKenney for their efforts on behalf of the *Journal* and the National Shellfisheries Association, which are gratefully acknowledged and appreciated.



Music Among the Shellfish: Carter Newell Notes from the Fiddling Biologist

Just as my academic and business career in bivalve aquaculture, shellfish ecophysiology, and coastal oceanography has had many twists and turns, alongside my career as a fiddle player has had just the same. After taking violin in grade school, I gave it up in high school, because while I liked classical music it never hooked me until I hear some old-time fiddling in college at Colby in Maine, where I immediately found my old violin over freshman break and began learning by ear along with my dorm mates Peter Siegel (guitar) and Bill Tiernan (banjo). We started playing for nursing homes (a captive audience) and got hooked on the early revival contra dances in the late 1970s in Maine, thanks to Dudley Laufman from New Hampshire. Partly an interest in molluscan marine ecology and an interest in Celtic and English Country Dance music led to a successful Watson fellowship based in Swansea, Wales (I lived in Mumbles down the street from Oystermouth Castle), my research and fiddling spread to English folk clubs, the west



The Oystermen play at Free Oyster Friday at Schooner Landing every Friday from June – September. Photo credit: C. Newell

coast of Ireland, Scotland, Shetland and Brittany. Joining the Swansea Morris Dancing team in 1978 and forming the Pig's Ear Caelidh Band, and meeting my future wife at a folk club, I returned to Maine and we formed the S. Bristol String Band and the Lincoln County Ramblers. On a parallel tract, I visited my first aquaculture research facility in Conway Wales, and there I learned about a M.S. Program in, where else than the University of Maine Darling Center under Herb Hidu where I was funded by Sea Grant to learn how to farm soft shell clams and wrote the first Maine Municipal Clam Management Manual with Dana Wallace (later to be taken over by Brian Beal). Luck for me, Herb was the NSA President, and in 1982 I

brought my fiddle to the President's room party and fiddled for the likes of Neil Bourne, Ken Chew, Roger Mann, Sandy Shumway, Mel Carriker, and others. Perhaps it was the fiddling and not my work on the biology, growth and cultivation of *Mya* that got me noticed from the start, resulting in being elected Vice President of the NSA for a brief stint in 1989. Fast forward to my fiddling career playing over 30 years with the Maine Country Dance Orchestra in Bowdoinham, Maine, the Old Gray Goose, and now the trio, The Oystermen.

After my M.S. in Oceanography in 1982, I started a dual tract of mussel and oyster farming (none had been commercially successful at that time), and Pemaquid Oyster Company was formed with Smokey (guitar, banjo and accordion and an old friend from Colby), two other music friends and Chris Davis, another Colby friend. As I started writing SBIR grants to commercialize mussel farming, my targets were, of course, consulting jobs in Ireland and Scotland (many great sessions in the pubs), as well as lots of fiddling fun at NSA meetings (New Orleans, playing with the Cajun band and crazy dancing with Herb Hidu and Dot Leonard) and a memorable night in a pub in Charleston with me on fiddle, Gef Flimlin telling jokes, Katherine Gattenby clogging, and Francis O'Beirn singing Irish songs. And of course playing with Gary Wikfors and John Ewart. Working on my Ph.D. in St. John, NB with Bruce MacDonald, Evan Young, and Dave Wildish, of course I also had to learn New Brunswick Down East Fiddling style, which became my favorite, along with Quebec style (and visits to Marcel Frechette in Mt. Joli, PEI fiddling (and meeting Jeff Davidson), Newfoundland fiddling (and the AAC meetings) and even the Irish Pubs in Amsterdam (meeting Aad Smaal). During that time, my three daughters (notably Maisie now 39 with 4 fiddling grandchildren), and Helen (just about 3 fiddling at the NSA reception in New Orleans years ago) and now a graduate of Berkeley. So the fiddling playing has been infectious (9 in the family over 3 generations) and the shenanigans continue! My latest album is *Passing it Down, Down East Fiddling* (with Helen and Maisie), and our trio the Oystermen, the Basket of Oysters. If you go to the east coast NACE meeting, its likely you will see the Oystermen (and perhaps a little fiddler or two!)



Fiddling with one-year-old grandson, Solomon. Photo credit: C. Newell

Carter Newell

NSA Student Receives 2023 BioOne Ambassador Award



Xochitl Clare (University of California, Santa Barbara) received the 2023 BioOne Ambassador Award in April for her submission, *"It's All About Relationships": Interdisciplinary Approaches to Understanding Ocean Warming Impacts on Fisheries*. The BioOne Ambassador Award recognizes early-career researchers who excel at communicating the importance

and impact of their specialized research to the public. Established in 2018, the goal of the Ambassador Award is to increase interest in recent research from rising researchers who are effective at communicating their work with the public. Effective communication is fundamental to ensuring the use of scientific information to make informed, evidence-based decisions. Nominees were asked to provide a plain-language summary (written, video, or other digital format) of their research which responded to the question: "How does your research change the world?". Winners receive a \$1,000 award and wide dissemination of their research. Xochitl is the second NSA student member to receive this award.

Winners were chosen through a competitive process. Active BioOne publishers were invited to nominate an early career researcher who published in their journal in 2022. In order to qualify, the author needed to be either a graduate student or a scientist who had completed their Ph.D. within the last five years.

Xochitl is a first-generation Afro-Latina marine biologist and her research focused on shelled marine gastropods and marine heatwaves, which threaten the structure of ecosystems they inhabit. Shellfish species, such as the Kellet's whelk, may be able to provision their progeny to be more resilient to oncoming thermal stress. Therefore, she investigated thermotolerance of the early vulnerable stages to determine whether or not shellfish like the Kellet's whelk were able to withstand ocean warming at the population level. More detail on this project can be found in her recent publication: [Xochitl S. Clare, Li Kui, Gretchen E. Hofmann. 2022. Larval Thermal Tolerance of Kellet's Whelk \(*Kelletia kelletii*\) as a Window into the Resilience of a Wild Shellfishery to Marine Heatwaves. *Journal of Shellfish Research*, 41\(2\): 283-290.](#)

To read Xochitl Clare's summary, view her video, and to learn more about the BioOne Ambassador Award visit: <https://bioonepublishing.org/our-work/2023-ambassadors/xochitl-clare/>

Congratulations, Xochitl!



Please check with your libraries and encourage them to subscribe to BioOne.2 or BioOne Complete for full access via the library portals. "Hits" count when it comes to royalties and these funds are very important to the NSA and support of publication of the JSR. Check out Xochitl's manuscript and **USE BIOONE OFTEN!**

4th Annual Scallop Gallop

The jewel in the crown of this year's NSA meeting in Baltimore was, of course, the Scallop Gallop. Participants ran or walked a course along the Inner Harbor. It was a fine day for a run and everyone had a great time.



Scallop Gallop participants: Lewis Deaton, Manoj Nair, Angel Carrasquillo, Caroline Polder, Skye Thomas, Connor Brainard, Hailea Howard, Laura Wiltsee, Nia Rene, Lauren Hintenlang, Susanna Osinski, Katie McFarland, Anna Poslednik, Alexa Romersa, Chris Edwards, Kurt Cheng, Ben Towne, Eric Schott, and Emily Kunselman. (Photo credit: Chris Edwards)

SHIFTING BASELINES in the CHESAPEAKE BAY AN ENVIRONMENTAL HISTORY



Victor S. Kennedy

Shifting Baselines in the Chesapeake Bay: An Environmental History

Vic Kennedy, Ph.D.
(2018)

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The NSA Welcomes New Honored Life Member

The National Shellfisheries Association acknowledged Professor Peter Cook of the University of Western Australia at the 115th Annual Meeting for his outstanding efforts to assure the sustainability of abalone aquaculture and fisheries through research, education, and industry collaboration. A full biography will be published in a future issue of the *Journal of Shellfish Research*.



Photo credit: Rumeena Nizam

NSA Sponsor Recognized

The Oyster Recovery Partnership (ORP) received the inaugural 2023 NMHS Marine Conservation Award by the National Maritime Historical Society of New York. The Marine Conservation Award acknowledges their exemplary work as stewards of our waterways, protecting and restoring ecosystems, promoting the sustainable management of marine resources, safeguarding and improving the well-being of the communities that depend on these resources, and increasing public awareness about the importance of protecting marine environments.



Aquaculture North America Annual Shellfish Spotlight Issue



Access the edition for free now:

<https://www.aquaculturenorthamerica.com/digital-edition/>



Jimmy Alcivar Arteaga Student Travel Award

Covers NSA membership, ESRAG membership (www.esrag.org), airfare, shared hotel room, meals, poster printing and airport-Charlotte-airport transportation costs. (12 awards available)

Students must present a poster at the NSA meeting and send an abstract (250 words), curriculum vitae, and copy of the visa page in your passport to fucobi@gmail.com as soon as possible.

Two Members Recognized with Paul Galtsoff Industry Award

Ms. Leslie N. Sturmer, Shellfish Extension Specialist at University of Florida IFA, and Mr. Donald Webster, Regional Extension Specialist at University of Maryland received the Paul Galtsoff Industry Award at the 115th Annual Meeting for their contributions linking science with industry needs, and substantial outreach efforts. A full write-up will be featured in a future issue of the *Quarterly Newsletter*.



Left photo: John Supan (L) and Leslie Sturmer (R) (photo credit: N. Anderson). Right photo: Don Webster (L) and Alan Patillo (R) (photo credit: M. Jepsen).

WOULD YOU LIKE A YEAR OF FREE MEMBERSHIP?

The Membership Drive Continues....

It's simple, just recruit five NEW members (not renewals). Remember, the NSA is only as strong as its membership, and its continued success depends on you. The NSA is now up to 524 current members (373 regular, 135 student, 9 sustaining, and 7 paid life members). Consider asking a colleague, student, or anyone interested in shellfish to join.

It's an easy sell - access to the *Journal of Shellfish Research* (print and on-line), the *Quarterly Newsletter*, reduced registration at annual conferences, and a strong and friendly group of like-minded individuals to share their interests in all things shellfish. Be sure they credit you on the membership form for joining so you can earn a free NSA membership. Questions, contact secretariat@shellfish.org.

Thanks to the following individuals for their recruitment efforts: Jeff Hetrick, Brian Cheng, Tara Plee, Sandra Shumway, John Carroll, Mike Doall, Daphne Munroe, Tal Ben-Horin, Ed Catapane, Rejean Tremblay, Abigail Scro, Scott Rikard, Daniel Taylor, Chris Brianik, Bassem Allem, Rom Lipcius, Emily Kunselman, Jon Puritz, Bob Rheault, Vengatesen Thiagarajan, Ximing Guo, Steve Geiger, Kim Gill, Aswani Voley, Rochelle Seitz, Andrew Kane, Maureen Krause, Eric Powell, Chris Langdon, and Acacia Alcivar-Warren.

Congratulations to Miriam Alcivar-Arteaga, Marta Gomez-Chiarri, and Peter Kingsley-Smith who recruited 5 new members and will receive one year of free membership.

Baltimore: Booming and Bountiful



Downtown Baltimore, Maryland. Photo credit: Eric Heupel

The 115th annual meeting of the National Shellfisheries Association was held in Baltimore, Maryland, March 26-30, 2023. Over 400 registrants (representing Canada, Mexico, China, Ireland, Spain, Italy, France, Norway, Australia, the U.K., Micronesia, and Portugal), including over 100 students, attended the first in-person meeting of the NSA in almost four years and took the opportunity to present over 300 papers and 75 posters. A plenary lecture started each day and provided attendees with colorful and thought-provoking presentations. Marisa Bass (Yale University) presented “More than just a shell: collecting and conchophilia in the Dutch Gold Age”, based on her recent book, *Conchophilia: Shells, Art, and Curiosity in Early Modern Europe* (Bass, Goldgar, and Grootenboer, 2021), Vic Kennedy (University of Maryland) took a walk through the history of oystering in the Chesapeake Bay with his lecture, “Depleting the immense protein factory that was Chesapeake Bay” based on his recent book, *Shifting Baselines in the Chesapeake Bay: An Environmental History* (Kennedy, 2018), Patricia Glibert (University of Maryland) discussed the impact of toxic algae on shellfish in her presentation, “Harmful Algal blooms and oysters: harm is multifaceted”, and Ximing Guo (Rutgers University) discussed “Shellfish aquaculture in the genome era”.

In addition to the traditional sessions covering biology, ecology, physiology, genetics and genomics, disease, fisheries, aquaculture, restoration, and others, there were new focused sessions and workshops including: a Diversity and Inclusion Workshop, a focused session for undergraduate presentations, a Public Engagement in Science Workshop, a ‘Meet the Agencies’ panel presentation, and newly added sessions on eDNA Applications for Shellfish, Birds and

Shellfish Sanitation, Robotics and Emerging Technology, and Macroalgae-Shellfish Co-culture. The conference also served as a venue for focused workshops from the FUCOBI Foundation (ShrimpENCODE, MangroveENCODE, and ONE HEALTH Epigenomics), Clam Selective Breeding Research Advancement & Operationalizing Genomic Research, and genetics and disease focal groups. The program will be posted on the NSA webpage (www.shellfish.org) **REMEMBER: this is not a citable document!**

Special features included the opening reception replete with shellfish donated by growers (Thanks to: Bar Harbor, BASE Seafood Auction, Bay Water, Double T Oyster Ranch, Eastern Fisheries, Harris Seafood, Hollywood Oyster, JD Blackwell, Madison Bay Seafood, Navy Cove Oyster, Nordic Inc., Pemaquid Mussel, Sea Watch International, South Point Oyster Farm, Taylor Shellfish, and Treasure Coast Shellfish), and a film festival (NSA at the Movies) with films showing continuously throughout the conference. The room was never empty and students took the opportunity to use the venue for an evening pizza party. The annual Scallop Gallop participants romped around Baltimore Harbor, the students enjoyed a field trip to the Baltimore Aquarium, a night out at a local barcade, and a Mentor-Mentee breakfast. The annual Auction to benefit the Student Endowment Fund brought in over \$4000.

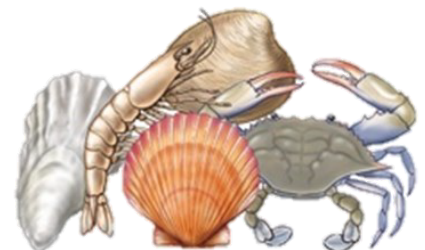
A large group of sponsors contributed to the overall success of the conference. These sponsors provided funds for program enhancements and expanded support of student participation. A special thanks to the USEPA, Northeast Regional Aquaculture Center, Maryland Sea Grant, Sheridan Press, Ferry Cove Shellfish, BioOne, Blue Oyster Environmental, Reed Mariculture, Matunuck Oyster Farm, FUCOBI, The Nature Conservancy, Oyster Recovery Partnership, UNESCO, VIMS, Gold Standard Diagnostics, FlowCam, UMBC, IMET, GloFouling, Aquaculture Information Exchange, Xylem Analytics, Breicon Genomics, Novamont, 5m Books, and Elsevier for their continued support.

It takes a lot of effort to make sure that all aspects of a conference are covered. We are indebted to Noreen Blaschik for handling the abstracts, working with registrants, keeping the webpage functioning, and all manner of other trivia, Eric Heupel for his artistic talent and his patience with many aspects of the conference, especially A/V, to Steve Allen for his unwavering efforts behind the scenes, and to the hotel crew at the Baltimore Marriott Inner Harbor at Camden Yards, especially Pat Palmere, Markus Addison, Chef Jerome Talley, and Rhondra Avery. A giant thank you to the students who helped with all manner of things from organizing their own activities to staffing the sales table and helping with A/V. These efforts were amazingly organized by Hannah Collins and Fiona Boardman and the meeting could not have functioned without all of them!

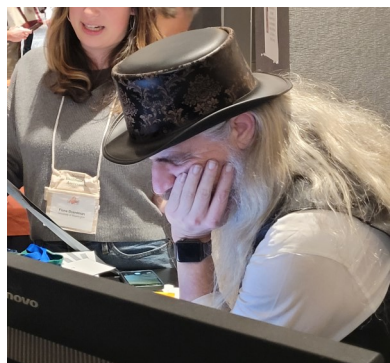
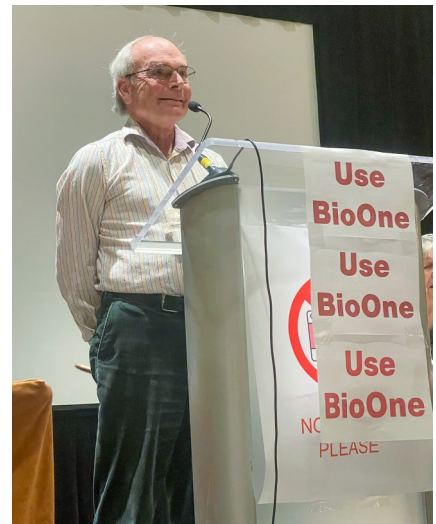
As an aside, seems the meeting was good for exercise plans. Eric noted that his step counter indicated that between Sunday wake-up to Thursday go to bed, we walked the equivalent of a half-marathon (13 miles) daily. My legs believe him.

The 116th annual meeting will be held in Charlotte, North Carolina March 17 – 21, 2024. Anyone interested in organizing or proposing a session, please contact Sandy Shumway sandra.shumway@uconn.edu.

Sandy Shumway



THE 115th ANNUAL MEETING



Birds and Shellfish Sanitation

At the National Shellfisheries Association Annual Meeting in Baltimore, I organized a session on 'Birds and Shellfish Sanitation' featuring eleven speakers. The session was well attended and highly informative. When the ISSC revised the aquaculture Chapter of the Model Ordinance, the FDA insisted on adding a section mandating that if your gear may attract birds or mammals, you need to have an operational plan that describes how you propose to mitigate the risk of contamination.

There are several essential take home messages from the talks:

- 1) Bird presence is seasonal and you may only need deterrents for a few months of the year depending on your site.
- 2) Birds are smart and will acclimate to most deterrents so growers may need to use several and switch them up.
- 3) Growers should make efforts to repel birds from your gear simply to avoid the risk of getting a high fecal coliform (FC) sample that could shut down your harvest. Even if you are just growing seed you probably cannot afford to have your growing area closed.
- 4) Growers in deeper waters with large tidal exchange will have a lower risk of high FC counts, but it may be a risk you don't want to take. Your state control authority will dictate what measures you need to take.
- 5) Human enteric pathogens are quite rare in wild bird waste, and the FC standard is a poor indicator of risk waters that are impacted only by wildlife; however, the risk is not zero and cannot be ignored. Furthermore, even if pathogen risk is low, the presence of guano in food is unacceptable and illegal under the Food Drug and Cosmetics Act.
- 6) There are lots of unknowns and many areas or research that need attention.

Martina Muller (University of Rhode Island) presented some of her team's work observing birds around shellfish aquaculture farms in Massachusetts and Rhode Island. Bird presence is highly seasonal with most of the roosting activity by gulls, terns, and cormorants occurring in the late summer/early fall season. We can expect bird activity to vary regionally and seasonally. We look forward to more weekly observations on farms this year.

Four speakers described a variety of approaches to repelling birds, including monofilament line, zip tie "ticklers", scare kites, sprinklers, bird-away® wire tufts, and gull sweeps. Many of these are pictured on our website (<https://ecsga.org/bird-interactions/>). All required maintenance and many interfered with the operation of the floating gear. Floating bags are much more challenging to protect than the Oyster-gro® / Flow-n-Gro® type cages.

David Borkman (Rhode Island Dept. of Environmental Management) described a *Campylobacter* illness outbreak that hospitalized eight oyster consumers who ate product harvested from a shallow, poorly-flushed growing area in October of 2021. While water samples taken 70 feet from the lease just a few days prior tested clean, meat samples taken after the illnesses were reported were quite high showing how challenging sampling can be. Once the grower sank the floating gear it took less than 18 days for the meats to test clean.

Steve Jones (University of New Hampshire) reported on years of microbial source tracking work where he observed bird-related microbial contamination in most samples. The fact that there have only been a handful of illnesses related to shellfish consumption hammers home the fact that the prevalence of human pathogens in wild bird waste is quite rare.

Rachel Nobel (University of North Carolina, Chapel Hill) emphasized the need for more studies. Molecular techniques can be useful to identify whether observed fecal coliforms (FC) are from a human source (where risk is well established) or from wildlife (where we have a poor understanding of risk). Unfortunately, most molecular techniques only tell you that genes are present, and cannot tell you if the pathogens are viable, or if they have died baking in the sun on a black float. Furthermore, unless you culture the pathogens and identify the strains it is usually difficult to say whether the pathogen is even a threat to humans at all since most pathogens are highly species specific.

Chris Schillaci (NOAA) summarized the 14 pages of guidance that was just adopted last week at the ISSC meeting (pending FDA approval). The Aquaculture Committee tried to provide states with a range of options to help them determine how best to manage bird challenges in their states. It encourages state regulators to consider tidal flow and depth before mandating expensive repellent measures and mandatory resubmergence.

Bobbi Hudson (Pacific Shellfish Institute) did a magnificent job summarizing many of the know unknowns, drawing on a number of publications that describe the rarity of human pathogens in wildlife waste, and the challenges of estimating risk in a sea of uncertainty. Clearly, the risk of contamination in areas with massive 12'+ tides (like Washington State) is not the same as it might be in an area like Maryland or the Gulf where three-foot tides are more the norm. She quoted a recent meta-analysis indicating "data are too limited and biased to make data-driven recommendations for managing wild birds to reduce enteric pathogen spillover to people." Her presentation has lots of great information and resources and can be found on our website.

I am hopeful that the new molecular tools that allow us to do source tracking on coliform samples will eventually allow regulators to consider ways to avoid closing growing areas when high FC counts can be tracked to birds and human sources can be ruled out. I am also confident that growers will continue to develop cost-effective, workable, repellents to deter birds in areas where low tidal flushing indicates such measures are needed.

Bob Rheault
East Coast Shellfish Growers Association

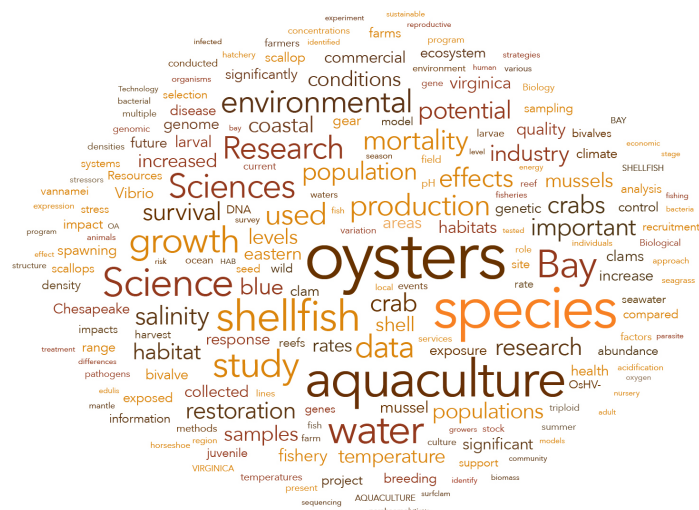


Great Blue Heron perched on shellfish gear. Jamestown, Rhode Island. Photo credit: M. Muller.

CALL FOR SESSIONS

Baltimore is behind us and now Charlotte is up ahead. If you would like to organize a session or have an idea for a session, contact Sandy (Sandra.shumway@uconn.edu)

If you have a short film you would like to contribute to 'NSA at the Movies' in Charlotte, contact Eric Heupel (eric@heupel.com).



*Kvarøy Arctic Women in Aquaculture
Scholarship Program*

This program offers women the chance to receive a \$10,000 scholarship and additional financial support to complete an internship that the recipients will independently arrange in their home countries to best serve them, their communities, and their future.

Women from around the world are invited to apply. Applicants must be currently enrolled in an undergraduate or graduate program studying an aquaculture-related discipline as your main area of study, and display proficiency in the English language.


**NOW ACCEPTING APPLICATIONS
THROUGH JULY 1, 2023**

<https://www.kvaroyarctic.com/women-in-aquaculture-scholarship>



2023 NSA Student Research Awards


The Association has a number of competitive grants for students that provide \$1250 in support student research projects as well as for the Outstanding Student Paper published in the *JSR*.



The **George R. Abbe Award** for student research devoted to the areas of crustacean biology and fisheries management was awarded to Gregory Rothman, University of Charleston, for his proposal “Investigating non-native crayfish, *Procambarus clarkii*, as a potential vector of white spot disease to native crustaceans in South Carolina, USA”.



The **Melbourne R. Carriker Award** for student research in any area of shellfisheries was awarded to Anna Poslednik, Virginia Institute of Marine Sciences, for her proposal “Genetic perspective on the phenotypic evolution of the marine parasite *Perkinsus marinus*”.



The **Michael Castagna Award** for student research devoted to the area of applied shellfisheries was awarded to Alexandra Mitchell, University of Charleston, for her proposal “Understanding reproductive development in female white shrimp, *Penaeus setiferus*, in support of sustainable fisheries management”.



The inaugural **R. LeRoy Creswell Award for Outreach and Education Award** for students who have shown exceptional merit in outreach activities was awarded to Kayla Mladinich Poole, University of Connecticut, for her outreach efforts regarding her dissertation research “Selective ingestion of microplastics by suspension-feeding invertebrates: investigations into sources, fate, and concentrations in coastal environments”.

The **Sandra E. Shumway Award for Outstanding Student Paper** published in the *Journal of Shellfish Research* has specific selection and evaluation criteria: (1) The lead author must have been a student when the work was completed, (2) the paper must present the student's work, not that of a co-author, (3) it will be evaluated on the quality of science and writing, and (4) the importance of the work to the field of shellfish research. A panel of judges evaluated 23 papers, and the award was presented to Samara French for her manuscript:

French, S.M., Courtney, A.J., and Yang, W.-H. 2021. Quantitative Analysis of the Fisher-Independent Queensland Saucer Scallop (*Ylistrum balloti*) Trawl Survey. *Journal of Shellfish Research*, 40(2): 297-309.

Thank you, again, to all the students for submitting their proposals and for the reviewers for evaluating each these proposals and student papers so thoughtfully.

Application deadline is November 1, 2023. Start planning now! Details are available at www.shellfish.org.

John Scarpa
Past-President

2023 NSA Student Presentation Awards

In advance of the 115th Annual Meeting of the National Shellfisheries Association held in Baltimore, Maryland, on March 26-30, 2023, the Student Endowment Fund Committee (SEF) and Recruits Co-Chairs encouraged student members to apply for registration and accommodation waivers through the SEF travel award lottery system resulting in 58 applications. Twelve students were provided shared lodging (two students per room for a total of six rooms) and six students were provided a registration waiver. In total, the SEF was able to offer assistance to 18 of the 58 applicants or approximately 31% of the applicants to the lottery system.

In the weeks leading up to the meeting in Baltimore, the SEF Committee identified eligible graduate students for the Thurlow C. Nelson and Gordon Gunter Awards, for Outstanding Oral and Poster Presentations, respectively, based on cross-referencing the lists of graduate student presentation abstracts from presenters indicating that they wished to be considered and NSA student members as of February 1, 2023. The Committee is extremely grateful to Noreen Blaschik for her assistance in generating these lists. Based on this process, 60 oral presentations and 15 poster presentations were identified as eligible to be judged for the Nelson and Gunter awards, respectively. Attendees were able to indicate their willingness to judge student presentations during both the registration process and during the abstract submission process, which together yielded a cohort of more than 130 potential judges for the meeting, although only a fraction of these folks actually turned in scores.

The SEF Committee is grateful to everyone who contributed their time, energy, and expertise to both the presentation competitions and the judging process. The Committee is delighted to announce the following results:



The **Thurlow C. Nelson Outstanding Oral Presentation Award** was awarded to Raymond Czaja Jr. (Stony Brook University) for his presentation, "Taking an energetic approach to predicting habitat suitability: the interactive roles of temperature and food availability in bivalve development."

The **Gordon Gunter Outstanding Poster Presentation Award** was awarded to Natalia Schoenberg (Virginia Institute of Marine Science) for her presentation, "Growth and survival of transplanted soft-shell clams (*Mya arenaria*) during a winter-to-summer grow-out period in the York River, Virginia."



Many congratulations to Raymond and Natalia who will receive two years of membership to the NSA, a certificate of accomplishment, as well as a great résumé builder marking this achievement! The SEF Committee hopes that the meeting in Charlotte, NC in the spring of 2024 will again bring a lot of participation and support for students at the meeting. We will be looking to recruit judges, so be on the lookout for those calls, and please volunteer!

Peter Kingsley-Smith
Melissa Southworth
Student Endowment Fund Committee

Treasurer's Report (FY 2022)



The most recent completed fiscal year (FY) for NSA was from October 1, 2021 through September 30, 2022, which encompassed the triennial meeting held in San Diego in February-March 2022. Revenues and expenses were \$237,981.94 and \$199,787.90, respectively, which resulted in a net gain of \$38,194.04. Total end of FY assets were \$644,724.80, which included \$158,052.20 in the Student Endowment Fund. We still maintain assets well above the prior 10-year average annual expenses of \$292,718, which the Executive Committee recommends for maintaining association financial security for unanticipated events. Thank you to those that contributed to the Student Endowment Fund and the very successful auction and sales booth at the Annual Meeting in Baltimore. And my final thanks to Sandy and Noreen for their incredible support for all aspects related to the NSA including assisting my role.

Jay Parsons
Treasurer

Coming Summer 2023 NSA Membership Roster

Review your NSA member profile to make sure it is up-to-date

www.shellfish.org

You can now add your orcid ID -
(under 'My Profile')

Questions: contact the NSA Secretariat
secretariat@shellfish.org

**JSR Article Featured
on BioOne**



The *Top & Trending Research* from BioOne
March 2023 collection:

"A Comparative Study on Metals and Parasites in
Shellfish of Freshwater and Marine Ecosystems"

By Laura Urdes and Acacia Alcivar-Warren

Congratulations!

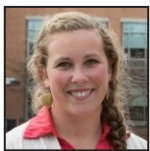
Recruits Corner

Fellow Recruits,

We hope you are having a wonderful end to your spring semester. It was great seeing you at the annual meeting this past March in Baltimore. We hope you enjoyed the informative sessions, networking opportunities, and student-focused events. Please don't hesitate to reach out with any comments on the conference or events you'd like to see in the future. Thank you to our student volunteers who donated their time and energy to helping the conference run smoothly. We can't emphasize this enough - without your help the annual meetings would not be possible. **Save the date for the next annual meeting, March 17 - 21, 2024 in Charlotte, North Carolina!**



Student Recruits visiting the Baltimore Aquarium, one of the student-focused events.



Congratulations to this year's student award winners. Greg Rothman received the George R. Abbe Student Research Grant, Anna Poslednik received the Melbourne R. Carriker Student Research Grant, Lexi Mitchell received the Michael Castagna Student Grant for Applied Research, Kayla Mladinich received the inaugural R. LeRoy Creswell Award for Outreach and Education, and Samara French received the Sandra E. Shumway Award for Outstanding Paper Published in the *JSR*. The Thurlow C. Nelson Award for Outstanding Student Oral Presentation was given to Ray Czaja Jr., and Natalia Schoenberg received the Gordon Gunter Award for Outstanding Student Poster Presentation. Feel free to reach out and congratulate your fellow Recruits on these great accomplishments! And as a reminder, applications for the student research grants are due November 1st of each year so make sure to apply! Details available at www.shellfish.org.



Finally, make sure you join the NSA Student Recruits Facebook group (<https://www.facebook.com/groups/2216454881732029>), and follow the NSA on Instagram (@nationalshellfisheries) to stay up-to-date on all things NSA, including cool research, important deadlines, and information about Charlotte 2024.

Please reach out to Hannah (hannah.i.collins@uconn.edu) or Fiona (fcboard@uw.edu) with any questions, concerns, or comments, or just to say hi!

Hannah and Fiona

NSA Pacific Coast Section News

Greetings from the Pacific Northwest. The NSA-PCS and the Pacific Coast Shellfish Growers Association (PCSGA) are busy planning the 77th Annual Shellfish Conference (NSA-PCS/PCSGA joint meeting) to be held September 19-21, 2023, at the Seaside Civic and Convention Center, in Seaside, Oregon. **The call for presentations is open and abstracts are due by June 15, 2023.**

Sessions may include:

- Ocean Conditions: Climate Change, Ocean Chemistry, Acidification
- Marine Pathogens, Shellfish Disease, Harmful Algal Blooms
- Human Health Issues: Vibrio, Norovirus, Biotoxins
- Justice, Equity, Diversity, Inclusion
- Restoration & Protection Efforts
- Ecosystem Services, Multitrophic Interaction, Pest Management
- Genetics, Broodstock Development
- Marine Debris & Microplastics
- Public Engagement, Education & Outreach
- Markets, Trade
- Kelp & Seaweed, New Farmed Species
- Marine Debris, Microplastics
- Community Impacts & Perceptions: Social License, Building Social Capital, Working Waterfront Conflicts
- Down on the Farm: Shellfish Growers Trials, Tribulations & Triumphs
- Permitting and Regulatory Issues

The session topics identified here are not intended to be exhaustive, and abstracts on additional research topics will be considered.

Submit your abstract now or if you would like to chair a workshop, visit: <https://pcsga.org/submit-abstract>. There is financial support for students (registration, banquet dinner, accommodation and travel) if you are presenting, along with eligibility to win cash prizes and one year free membership to the NSA. Contact Jodie Toft (jodie@restorationfund.org) or Laura Spencer (lhs3@uw.edu) with questions. Early-bird registration will be opening soon, you can find more information at: <https://pcsga.org/annual-conference> or follow us on Twitter (@nsapcs) and Facebook.

Look forward to seeing all of you in Seaside, OR.

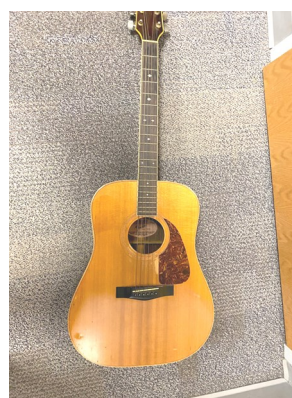
Sandy Zeiner
Pacific Coast Section Chair



OWN A PIECE OF HISTORY!

LeRoy Creswell's Guitar

A Fender F-260S MIJ (Made in Japan) vintage acoustic guitar. It was manufactured in only one year, 1987. The back and sides are made of Cambodian rosewood. Estimated value \$650 - \$750.



THIS IS A SILENT AUCTION – all proceeds will go to the Student Endowment Fund. If you are interested in making an offer, contact Lou D'Abramo (ldabramo@grad.msstate.edu)

Still 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. 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). 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.

Harvey W. Wiley

Pieter Korringa

Philip Butler

R.E. Coker

J.L. McHugh

Hugh Smith

Robert Lunz

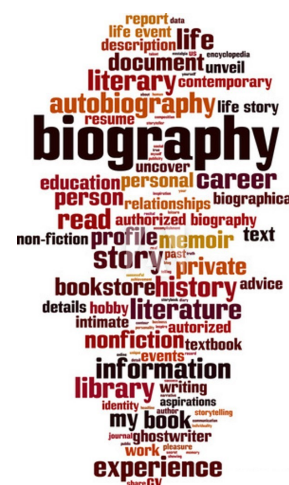
H. Butler Flower

Walter A. Chipman

Wesley Coe

Paul S. Galtsoff

Robert Ingle



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

EXCOM Members

Aswani Volety
President
UNCW
601 South College Rd
Wilmington, North Carolina 28403
Email: voletyak@uncw.edu

Kevin Stokesbury
President-Elect
SMASST/UMASSD
836 South Rodney French Blvd
New Bedford, MA 02744
Email: kstokesbury@umassd.edu

Brian Beal
Vice President
University of Maine at Machias
Downeast Institute
116 O'Brien Avenue
Machias, ME 04654
Email: bbeal@maine.edu

Jay Parsons
Treasurer
68 Ch Du Barrage
Chelsea, QC Canada J9B 1N2
Phone: (613) 290-5333
Email: Jay.Parsons007@gmail.com

Peter Kingsley-Smith
Secretary;
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

Lewis Deaton
Past-President
Chair, Past-Presidents, Elections, Awards
Committee
815 Genevieve Dr
Lafayette, Louisiana 70503
Email: lewis.deaton@lusfiber.net

Steven M. Allen
Senior Past-President
Editor, *NSA Quarterly Newsletter*
32 Towle St
Auburn, ME 04210
Phone: (443) 994-5164
Email: stevenmallen@gmail.com

Maureen Krause
2021-2024 Member-at-Large
Chair, Resolutions Committee
Dept. of Biology
114 Hofstra University
Hempstead, NY 11959-1140
Phone: (516) 463-6178
Email: maureen.k.krause@hofstra.edu

Stephen Geiger
2022-2025 Member-at-Large
Florida Fish & Wildlife Research Inst.
100 8th Avenue S.E.
St. Petersburg, Florida 33701
Email: steve.geiger@myFWC.com

Ed Catapane
2023-2026 Member-at-Large
2105 Gerritsen Ave
Brooklyn, New York 11229
Email: catapane@mec.cuny.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
1 Hills Beach Road
Biddeford, ME 04005
Email: kraeuter@hsrl.rutgers.edu

Sandy Zeiner
Chair, Pacific Coast Section
Membership Committee
Northwest Indian Fisheries Commission
6730 Martin Way East
Olympia, WA 98516
Phone: (360) 528-4370
Email: szeiner@nwifc.org

Other Contacts

Roger Mann
Co-Chair, Publications Committee
Virginia Institute of Marine Science
P.O. Box 1346
Gloucester Point, VA 23062
Phone: (804) 684-7360
Email: mann@vims.edu

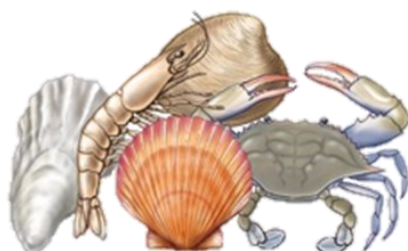
Juliana Harding
Co-Chair, Publications Committee
Coastal Carolina University
Department of Marine Science
P.O. Box 261954
Conway, South Carolina 29528-6054
Email: jharding@coastal.edu

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

Hannah Collins
Recruits, Co-Chair
University of Connecticut
Dept. of Marine Sciences
1080 Shennecossett Rd
Groton, CT 06340
Email: hannah.i.collins@uconn.edu

Fiona Boardman
Recruits, Co-Chair
University of Washington
Department of Biology
Box 351800
Seattle, WA 98195
Email: fcboard@uw.edu

Noreen Blaschik Favreau, *Secretariat*
Associate Editor, *NSA Quarterly Newsletter*
Webmaster
University of Connecticut
Dept. of Marine Sciences
1080 Shennecossett Rd
Groton, CT 06340
Email: secretariat@shellfish.org



Noreen Blaschik Favreau, *QNL* Associate Editor
University of Connecticut
Marine Sciences Department
1080 Shennecossett Rd
Groton, CT 06340 USA
Forwarding Service Requested

Upcoming Events

77th Annual Shellfish Conference (NSA-PCS/PCSGA): Sept. 18-21, 2023. Seaside, Oregon. For more information: <https://pcsga.org/annual-conference>

Northeast Aquaculture Conference & Exposition/43rd Milford Aquaculture Seminar (NACE/MAS): Jan. 10-12, 2024, Providence, Rhode Island. For more information: <https://www.northeastaquaculture.org>

Aquaculture America 2024: Feb. 18-21, 2024. San Antonio, Texas. For more information: www.was.org

116th NSA Annual Meeting: Mar. 17-21, 2024. Charlotte, North Carolina. For more information: www.shellfish.org

23rd International Pectinid Workshop: Apr. 24-30, 2024. Douglas, Isle of Man. For more information: www.internationalpectinidworkshop.org

Aquaculture 2025 (Triennial): Mar. 6-10, 2025. New Orleans, Louisiana. For more information: www.was.org

If you would like to announce a meeting, conference, workshop, or publication of interest to NSA members, please contact the *QNL* Editor, Steven Allen (stevenmallen@gmail.com).

