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National Shellfisheries Association Quarterly Newsletter

2019 (4)

President's Message



Greetings everyone! For those of you in the U.S., you may be still working off extra calories from your Thanksgiving holiday meal, especially the oyster stuffing (or dressing as it is known in my Southern household). As the year comes to an end, you may be reviewing your past year accomplishments or failures and making plans to do even better for the new year. I

know I am, as well as the NSA Executive Committee. We are already at the end of the first quarter of our 2020 fiscal year. If you have not renewed your membership for 2020, please do so now as we aim to start off the new year with 100% of our members renewing. Along with renewing, please consider adding \$5, \$10, or more as a donation to the Student Endowment Fund (SEF).

You will soon be receiving your ballots for different Executive Committee positions. The candidates are well-qualified and are ready to give their time to assist with managing the Association. Please return your completed ballot as soon as you get it. For those overseas and e-mailing your vote, be assured your identity is removed from the ballot or e-mail before it is counted by two different Committee members.

We are only a few months from the Annual Meeting, which will be in Baltimore from 29 March – 2 April 2020. Even if you are not presenting, you will hear something new, make new friends, and enjoy the city. If you have never been to an NSA meeting before, a plenary speaker starts each day. You don't want to miss them. We have 42 session topics, which means there will be something of interest to you. Baltimore is a wonderful city, but make sure to attend the NSA auction that supports the SEF, as well as to bring items for the auction. There are unique items that you will not want to leave without. I expect to see you there.

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. Our Newsletter Editors fooled me into thinking the last newsletter was it for the year. So, I get to wish you all again a Happy New Year! Feliz Año Nuevo! Bonne Année! Akemashite Omedetou Gozaimasu! Sun Nien Fai Lok! Ein Gluckliches Neues Jahr! Buon Anno! Godt Nyttår! Sehe Bokmanee Bateuseyou! Manigong Bagong Taon!

John Scarpa, President

Meeting Deadlines

Abstract Submission:
December 15, 2019

Poster space still available, contact Sandy
(Sandra.shumway@uconn.edu)

Early-Bird Registration:
January 18, 2020

Hotel Registration Cut-off:
February 28, 2020

www.shellfish.org

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ISSC 2019 Biennial Meeting Overview

About three dozen industry members joined at least fifty state shellfish regulators and a phalanx of FDA and CDC officials in San Diego for the five-day ISSC Biennial Conference. Here is a Cliff Notes version of activities. We were tasked with evaluating a record 130 proposals to change the National Shellfish Sanitation Program. Many of us spent weeks reading > 1000 pages of material and listening in on about 15 hours of conference call discussions.

As usual, the results include some wins and some losses. Many proposed changes were sent back to various committees in the hopes they can be perfected over the next two years and reconsidered at the next ISSC meeting. Some proposals were adopted and some rejected outright. We expect to see a Summary of Actions from the Executive Office in a few weeks and in a few months the FDA will either concur and approve our actions, or disagree and effectively veto some of the changes that we approved. Once that happens, the changes to the Model Ordinance that we adopted will become regulations.

Much of the work in this year's conference was dedicated to addressing the CDC perception that *Vibrio* illnesses are on the rise. Our data show that states are reporting declines in illness rates per meal, while production has doubled and detection is improving. The FDA and CDC are concerned that most illnesses are associated with people who ate more than one type of shellfish at a meal. Many (if not most) consumers are enjoying varieties of shellfish at one sitting. These "multi-source illnesses" make it impossible for regulators to know which shellfish is at fault. Regulators have been challenged to develop an approach to deal with these multi-source illnesses and we considered several proposals designed to address the issue. We made some progress, but this issue will remain a vexing challenge for years to come.

One of the more important actions was a significant setback for growers who operate in the vicinity of mooring fields (mostly an East Coast issue). The FDA has stretched their interpretation of "structures" in marinas to include mooring tackle, thus states now need to reclassify harvest areas around marinas. In many states this will pose a huge burden on the state regulators in terms of water sampling and administrative work. These mooring areas are "no-discharge zones" and states have invested millions in pump-outs and enforcement to ensure boats are not flushing heads inside state waters, and we believe these efforts work.

Efforts to tighten requirements to close harvest areas and force recalls after fewer illnesses were not well received and these proposals were sent back to committee. Many poor proposals suffered a similar fate. In the category of "Don't we have bigger issues?", proposals to require hand sanitizer as well as language directing the proper placement of toilet paper on the roll were all happily rejected.

In closing, we want to thank all the industry folks who took valuable time away from their jobs and families to come and do this important work.

Robert Rheault
Margaret Pilaro



Still haven't decided if you'll attend the 112th Annual Conference in Baltimore?

By the time you get this *Newsletter*, the deadline for submitting abstracts will have passed – but there's always room for more posters should you make a last-minute decision to attend. The program is a strong one, thanks to many folks who have stepped up to organize sessions - THANK YOU! We have several

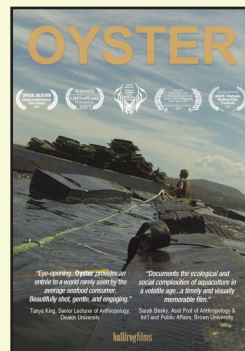


generous sponsors and looking forward to seeing all of them at the meeting. When you see them, thank them, their support makes many things possible and ensures a quality and fun meeting. Their support also helps to provide funds to bring more students to the meeting. Check the webpage for program details, sponsors, and deadlines. Don't forget to start cleaning your offices early – the Auction needs all the treasures you can spare. Peter Kingsley-Smith and Missy Southworth are soliciting judges for the Gunter and Nelson Awards. If you can help out, please contact them directly (KingsleySmithP@dnr.sc.gov; melssouth@vims.edu). This meeting promises to be one of our best, come and be part of it.

See you in Baltimore.

Sandy Shumway

Kim Beamish's documentary, OYSTER



Bullfrog Films offers members of the National Shellfisheries Association a 10% discount for the OYSTER DVD licensed with public performance rights. Use coupon code "NSA10" to receive the discount when placing an order online <http://www.bullfrogfilms.com/catalog/oys.html>, or call Bullfrog Films at (610) 779-8226 or toll free (800) 543-3764.

Oyster is a well-told local story of coastal farming and stewardship with a global message - healthy environments promote healthy seafood. The story balances the benefits and hardships that come with oyster farming, and provides the audience with food for thought regarding their future, be it in shellfish farming, preserving our coasts, or protecting the environment."
Sandra Shumway, University of Connecticut

Do you have news items? This is your *Newsletter*

*Shellfish research
Meetings/workshops
Book reviews*

Please send news items to the
QNL team -

LeRoy Creswell
(creswell@ufl.edu)

and

Noreen Blaschik Favreau
(Noreen.blaschik@uconn.edu)



**Ballots are on their way.
Watch your mailbox!**



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open for Christmas!**

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Keep track of your
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Fits easily in a card,
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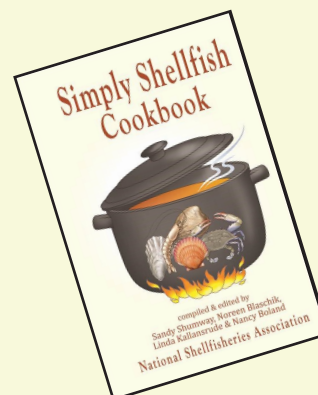
Pins: pewter: sm \$3, lg \$5
gold: sm \$5, lg \$10
tie tacs: \$10

Molluscan Playing Cards: \$10 each or
3 for \$25

Contact Sandy to place your order

**All proceeds benefit the
Student Endowment Fund**

**Consider a gift membership
for your favorite student!**



Discover interesting
facts on 52 different
molluscs

Recruits' Corner

Dear Fellow Students,

As the days are getting shorter and colder, we hope that you're snuggling up to write your abstract for NSA 2020 in Baltimore, Maryland, March 29th through April 2nd, 2020! **Both abstracts and the SEF Travel Award Lottery applications are due December 15th, 2019!** These awards provide support for lodging, registration, travel, or all of the above for students attending the NSA 2020 Meeting.

The SEF Travel Awards are now awarded via lottery. The application is available to download at www.shellfish.org/sef-student-presentation-and-travel-awards.

To be eligible, you must be a current member of the NSA, be presenting original research, and be the first author of an oral presentation or poster. Current graduate students and former graduate students within one year of graduating, can apply. **Additional funding opportunities for sponsoring travel for minority students** are available from the FUCOBI Foundation. Details are available at www.shellfish.org.

The deadline for early-bird registration for the conference is **January 18th, 2020**. You must be a current NSA member to get this rate. Don't forget, the President's Reception and Business Luncheon are included in your registration. You won't want to miss these opportunities for food, fun, and networking.

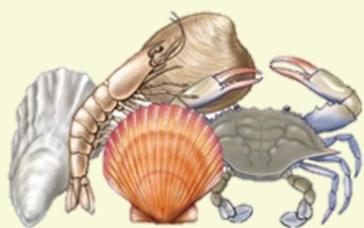


Don't forget to encourage your classmates to become NSA members! Student members receive copies of the *Journal of Shellfish Research*, receive online access to both past and current issues of *JSR*, and are eligible for research and travel grants. Student membership is only \$50 annually, and **those who recruit FIVE people to join NSA receive one year of FREE membership**. Make sure to notify the NSA Secretariat,

Linda Kallansrude, to receive credit for your recruits.

Watch out for updates on our Facebook page, "NSA Students", regarding student events and room sharing at the 2020 conference in Baltimore. For additional details, visit the NSA student page <https://www.shellfish.org/student-members>. As always, email Erin (erin_roberts@my.uri.edu) or Laura (lhs3@uw.edu) with any ideas or concerns.

Laura & Erin



Student Travel and Presentation Awards

Student Endowment Fund (SEF) Travel Awards: As a reminder to any student interested in applying for the Lottery to receive either a lodging or registration waiver for the 112th Annual Meeting this coming spring (March 29th-April 2nd 2019) in Baltimore, MD, the deadline to apply to the Lottery is the same as the Abstract deadline - December 15th 2019. The Lottery approach is a marked change from past meetings. Since the inception of the Lottery, any graduate student who submits an abstract (as first author) for either an oral or poster presentation AND is a current member of NSA is eligible for a SEF Travel Award. Please visit the student member section of the NSA main website (www.shellfish.org/student-members) or follow the link from the 112th Annual Meeting page (www.shellfish.org/annual-meeting). Successful students will be notified of the Lottery results by the end of December 2019.

Graduate student presentation awards: Graduate students (not undergraduates) presenting their original research are encouraged to compete for the Nelson and/or Gunter presentation awards. The Thurlow C. Nelson Award is presented for an outstanding oral presentation of original research. The award is named for the distinguished shellfish biologist who served as NSA President from 1931 to 1933, and contributed more than 125 papers, many relating to oyster biology. The Gordon Gunter Award is presented for an outstanding poster presentation of original research, so bring your best stuff. Recipients of each of these awards receive membership for two years to NSA, and the professional benefits associated with membership, as well as a certificate of accomplishment. To apply for these presentation awards, students must submit their abstract(s) online (<https://shellfish.memberclicks.net/annual-meeting---abstract-submission>) by the submission deadline (December 15th 2019) and indicate that they wish to have their presentation(s) judged for this/these award(s).

CALL FOR STUDENT PRESENTATION JUDGES: The presentation of the Nelson and Gunter awards would not be possible without the generous donation of time, energy, patience, and expertise of a cadre of judges (from past meetings, you know who you are and we THANK YOU... and please step up to the plate again if you can). If you wish to help out with this judging process at the meeting, please indicate this as part of your meeting registration process online, or contact Peter Kingsley-Smith directly and he will add you to his lists! Judges can help with oral presentations or posters, or if feeling especially ambitious, both!

As a related reminder to session chairs and moderators, please look out for eligible student presentations within your sessions (typically highlighted with asterisks in the meeting program). Please keep to the schedule. Often judges will be moving between concurrent sessions and it is important that they not miss the start of student presentations. If times allows, also please try to encourage the audience to ask students questions at the end of their talks as this is part of the evaluation process (and try to avoid having advisors, colleagues, or others answer the questions on the student's behalf!).

The SEF Committee is excited for another great meeting that provides a variety of opportunities for student participation and professional development!

Peter Kingsley-Smith (kingsleysmithp@dnr.sc.gov)
Melissa Southworth (melsouth@vims.edu)
Leroy Creswell (creswell@ufl.edu)

Oyster Shells Inspire Scientists to Create Glass That's Much Harder to Shatter

By: Roni Dengler

Crack open an oyster shell and the inner face shimmers in a rainbow of kaleidoscopic colors. This smooth material, known as mother-of-pearl, is beautiful and resilient – so resilient that it has inspired the creation of virtually shatterproof glass.

“Our bioinspired glass is 2-3 times more impact resistant than laminated glass and tempered glass — the ‘standards’ for impact-resistant transparent materials,” says McGill University engineer Francois Barthelat, who led the new research.

Glass is an amazing material. It's see-through, durable and doesn't degrade in the face of heat or chemicals. But it does have an Achilles' heel: sharp impacts. What might seem like the smallest bonk can shatter glass. Tempered glass helps protect against minor bumps and dings. The material is compressed at its surface, which helps to prevent cracks from forming. When it does crack, however, the entire material fails and the glass explodes. Laminated glass – where a softer material is sandwiched between layers of glass – does a better job of holding together than tempered glass, but its impact resistance isn't much better. That's where mother-of-pearl shines.

On the microscopic level, mother-of-pearl looks like it's made out of tiny building blocks. Under force, the mineral blocks can slide apart from each other. The sliding allows the material to take on substantial blows without breaking. Barthelat and colleagues realized they might be able to take advantage of this structure to make a synthetic glass that duplicates mother-of-pearl's sliding property, overcoming glass's inherent brittleness.

First, the researchers used a laser to cut “bricks” out of borosilicate glass sheets, which were then laminated. Then the team aligned and arranged the sheets so that the final product mimicked the three-dimensional structure of mother-of-pearl, with a type of plastic (called ethylene-vinyl acetate) acting as the “mortar.”

The new glass performs seemingly flawlessly. It's transparent, does not produce any image distortions and instead of breaking under high stress, it bends. It also outperforms Plexiglass, two types of tempered glass and laminated glass in its impact resistance, the researchers report Thursday in the journal *Science*. All while being just as strong as laminated glass.



Photo credit: Lizard/Shutterstock

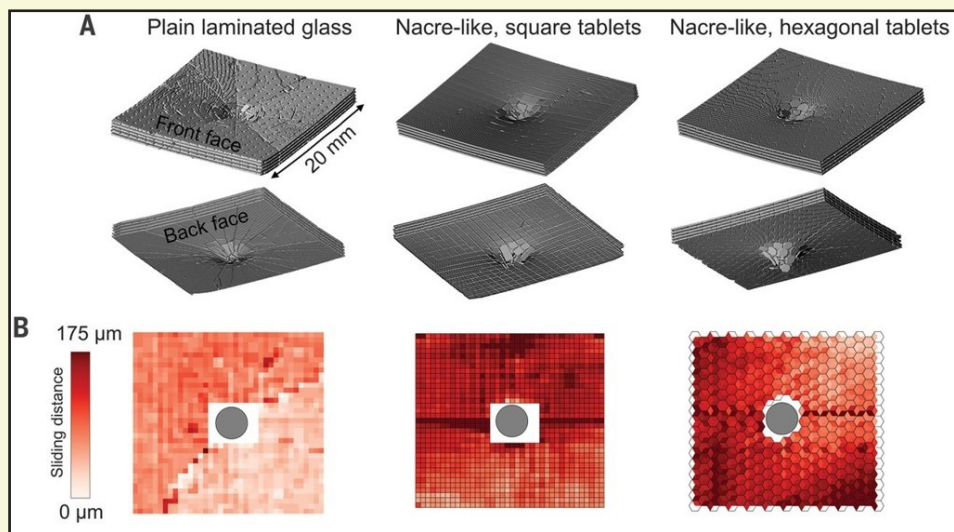


Figure 3: Micro-CT scans and analysis for plain laminated and nacre-like panels. (A) Three-dimensional microtomography perspectives of punctured samples (for plain laminated glass, arrays of microdots were engraved on the surface of the layers to track their relative sliding). (B) Maps of the sliding distance in the lowermost interlayer, showing larger and more distributed sliding in the nacre-like designs. Credit: Z. Yin, F. Hannard, and F. Barthelat.

Plus, when the new material does break, it does so in a “graceful” fashion, says Barthelat. “Instead of breaking catastrophically with many cracks and shards like regular glasses, our material is much tougher: It ‘dents’ and deforms instead of cracking.” That means materials made from the new glass would be more resistant to chips, cracks and even small punctures. Barthelat says there are countless applications for the bioinspired glass – everything from windows and windshields to solar panels and touchscreens. And it won't be that hard to manufacture, he says. “Our fabrication method is relatively easy and scalable,” Barthelat says. “One could make industrial volumes of this material very easily and at a reasonable cost.”

For more information: Z. Yin, F. Hannard, and F. Barthelat. 2019. Impact-resistant nacre-like transparent materials, *Science*, 364 (6447): 1260-1263.

Reprinted from *Discover Magazine*, June 28, 2019.

BioOne: There's More Than Meets the Eye

By: Christine Orr, BioOne Director of Sales and Marketing

You may know that BioOne is the online home to the *Journal of Shellfish Research*, providing access for the National Shellfisheries Association (NSA) members. But it might surprise you to learn that BioOne also connects NSA to researchers around the globe, adds to the NSA bottom line, and supports the scientific community with an array of programs.

Global Exposure & Reach for the *Journal*

The most recent issue of *JSR* featured authors from China, Malaysia, Mexico – and Louisiana. Research is global, and it's critical to share it as broadly as possible. More than 4,000 libraries and research institutions around the world have access to the *JSR* via its inclusion in BioOne Complete – a collection of 214 scholarly bioscience publications. Other societies contributing marine sciences content include the Crustacean Society, the Institute of Malacology, the American Fisheries Society, Muséum national d'Histoire naturelle, and the Coastal Education and Research Foundation. BioOne Complete forms a critical mass of high-quality content that is easy for libraries to add to their collections. It thus reaches faculty and students in markets that many individual publishers would be unable to penetrate on their own. In addition, through a partnership with Research 4 Life (R4L), BioOne provides free access for over 2,500 developing world institutions across more than 80 nations. This program benefits the entire scientific community and furthers our participating publishers' missions. This exposure to the global scientific community is not only critical for distributing knowledge, it grows readership, increases your author base, and generates citations. Our global sales force is dedicated to expanding the reach of your publications.

New Platform Showcases NSA Content

Even the best research content has limited impact if scientists and students can't find it or incorporate it easily into their workflow. BioOne took a major step in this direction in 2019 by moving to a new platform. BioOne Complete now showcases publisher content on a sleek, modern interface that makes it easier to move throughout the site. A powerful search engine and new "Browse-by" options simplify identifying relevant content. Back-end improvements such as metadata-rich URLs, a fully functional mobile site, and other search engine optimization features make content more discoverable through external search engines like Google.



You can also access a new tool "My Library," which allows you to save and organize articles in a personal library. For more information see "Using My Library" in the Tools and Features Help section. [<https://bioone.org/help/tools-and-features>].

Impact and Revenue

BioOne's business model is driven by a mission to foster sustainable, independent society publishing – we want you to continue to perform the science that is meaningful to you while ensuring that your content is revealed to the broader research sphere.

Royalty Revenue. One ingredient in sustainable publishing is the financial component. Each year, BioOne shares over 60% of the net subscription revenue with each participating publisher. Since 2007, BioOne has returned \$631,746 to NSA. If your library is not a subscriber, please encourage them to do so!

Downloads also count. Every reader who clicks on a *JSR* article broadens the impact of NSA, and may even be a potential author. *JSR* content performs strongly on the BioOne platform, and in 2018 the *Journal* garnered nearly 5 times the number of clicks than the average BioOne publication! Since joining BioOne in 2007, *JSR* has registered more than 1.6 million hits, reaching an ever-widening audience. The *JSR* impact factor has likewise risen, significantly, from 0.479 in 2007 to 1.037 today. Susi Skomal, President and CEO of BioOne commented that, "BioOne is very proud of all NSA has achieved over the years since joining the community! We look forward to many more years of collaboration and discovery."

Support for Scientists

BioOne also supports scientists directly and we encourage NSA members to take advantage of these additional BioOne programs:

Career Center offers job seekers and employers an affordable and effective job board focused on the biological sciences. Sign up for job alerts, or post available positions - fellowship and internship opportunities are always free to post! Visit the Career Center at <https://bioonecareercenter.org/>

Ambassador Award. Launched in 2018, the award recognizes early-career authors of BioOne Complete publications and aims to inspire creative approaches to communicating specialized research to the general public. Please have a look at the work of the 2019 Ambassadors at <http://www.bioonepublishing.org/BioOneAmbassadorAward/2019/2019Winners.html>

Author Support Services. If you are submitting to *JSR* and need assistance with improving the English, BioOne has partnered with Charlesworth Author Services to provide a discount on English language editing and manuscript preparation services. Interested authors can learn more about these optional services at <https://www.cwauthors.com/BioOne>.

See you in Baltimore!

It is a pleasure to work on behalf of the NSA community and BioOne staff welcome your feedback. We're delighted to sponsor the NSA annual meeting, and look forward to joining you in Baltimore! Stop by our exhibit table to meet us in March, or learn more at <http://bioone.org>.



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HAVE YOU RENEWED YOUR NSA DUES FOR 2020?
If not, this is your last issue of the *Newsletter*.
Membership dues expire every December, so head on over to
www.shellfish.org

Upcoming Events

Milford Aquaculture Seminar, Jan. 13-15, 2020. Courtyard by Marriott, Shelton, CT. For more information: www.nefsc.noaa.gov/nefsc/Milford/mas

112th Annual NSA Meeting: Mar. 29 - Apr. 2, 2020. Crowne Plaza Hotel Baltimore Downtown-Inner Harbor. For more information: www.shellfish.org

Physiomar 2020: Sept. 1-4, 2020. Nelson, New Zealand. For more information: www.physiomar2020.org

Aquaculture Europe 2020, "The Blue and the Green". Sept. 29 - Oct. 2, 2020. Cork, Ireland. For more information: <https://www.aquaeas.eu>

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).

For more information on these conferences:
www.was.org

Aquaculture 2020: Feb 9-12. Honolulu, Hawaii, USA

Aquaculture Canada/WAS North America 2020: Aug 30-Sept 2. St. John's, Newfoundland, Canada

Aquaculture America 2021: Feb 21-24. San Antonio, Texas, USA

Aquaculture 2022: Feb 27-Mar 3. San Diego, California, USA

Aquaculture America 2023: Feb 19-22. New Orleans, Louisiana, USA