Summer/Fall 2020 Volume 56 Number 2 October 9, 2020

PHYCOLOGICAL NEWSLETTER

MESSAGE FROM THE PRESIDENT

Greetings Phycological Friends,

As 2020 continues the inexorable march to completion, I am reminded of the old aphorism/curse "may you live in interesting times". Changes are always fraught with challenges, but as biologists we recognize that such changes are also opportunities for novel innovations and strategies. How many of our favorite taxa, biochemical pathways, interesting features, etc. have come about after major upheavals? One of the great parts about my job is that I have an opportunity to interact with numerous phycologists diligently working even during these trying times. The fantastic members who comprise the PSA are thriving and looking forward to new endeavors. "Give me some examples", you say. Well...

First, this was an unprecedented year for the PSA in terms of the Annual Meeting. While Covid-19 prevented us from a traditional, in-person event, the extraordinary virtual program committee **(Amy Carlile, Patrick Martone, Sabrina Heiser, and Eric Linton)** crafted an epic on-line one instead. The amazing thing about this gratis endeavor: **we had 800 folks register with 438 unique views the first day alone!** Clearly, we are reaching a wide swath of the planetary phycological community, and I am sure that we will continue to employ some of the great features we explored this year in subsequent meetings. Presenting member-submitted lightning talks, the meeting also showcased the Student Symposium, with **Patricia Glibert**, **Bilassé Zongo**, and **Nelson Valdivia**. This bi-annual symposium is an opportunity for the graduate students in the society to choose some phycological luminaries as speakers. This year's annual meeting also featured the inaugural PSA Co-Editors Symposium, where we as a society had an opportunity to hear from **Thomas Wernberg**, one of the newly designated, future co-editors of the Journal of Phycology. We hope to have the other future co-editors give talks to the society at the virtual meeting in 2021. We were also pleased to have our most recent **Lang Award Fellow Holly Moeller** present her research: *Modeling*

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Complex Endosymbiosis: Empirical and Mathematical Studies of the Genus Mesodinium.

The annual meeting is also an opportunity for us to acknowledge some of the luminaries that have made the field of phycology what it is today. We were honored to be able to recognize two **PSA Award of Excellence** winners this year: **Susan Brawley** and **Craig Schneider** (please see the notes about both of these excellent phycologists elsewhere in the Newsletter). We also presented the **Gerald W. Prescott Award** to **John Huisman** for his fantastic book *Algae of Australia: Marine Benthic Algae of Northwestern Australia, 2. Red Algae*.

Second, PSA has not been idle in its collective endeavors this summer. In response to the difficulties of teaching in a distance format, the **PSA Education Committee**, chaired by **Bridgette Clarkston**, has crafted a set of over 100, crowd-sourced algal teaching items on the PSA website! Further, they sponsored the inaugural **PSA Teach Algae** contest which had many excellent entries from around the world, including a mix of lab and classroom activities and course syllabi. A curated list of entries is now available on the PSA website (https://www.psaalgae.org/educational-materials), with 10 exciting entries selected as prize winners. We thank Bridgette, the committee, and all of our fantastic members who contributed to the endeavor!

PSA is composed of numerous folks who provide their time, effort, and creative outputs gratis, and for the love of all things phycological. Thus, we greatly acknowledge their fantastic contributions to the field. **Amy Carlile** has heroically served as the Program Director for the last three years, helping us craft some excellent meetings. 2020 marks Amy's last year in the post, and we wish her all the best (and some well-deserved rest). Likewise, **Kirsten Müller** is wrapping up her tenure as the PSA Past President. Folks may not be aware of this, but the Presidential post entails a tremendous amount of work (often behind the scenes), and Kirsten has been a tireless proponent of the PSA and its members. Her selfless attention to the society is noteworthy, and it is with great gratitude that I acknowledge the extraordinary role Kirsten has had on us all.

We are also excited to announce two new Executive Committee members. First, **Deborah Robertson** has been elected by the membership as our new, incoming Vice President/President elect! Deborah has been a member of the PSA Executive Committee and a valuable contributor to

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society functioning, and we are thrilled to welcome her in her new position. Second, Amy's shoes as PD are being filled by **Schonna Manning** who will begin her tenure in 2021. Many of you recognize Schonna as a driving force behind the Applied Phycology Symposia at the meetings, and we are thrilled that she acquiesced to become our new PD! We look forward to working with both of these wonderful folks in the future.

Lastly, I close by noting that even as the world changes, many things remain the same. Even though most of us have been in lock-downs this year, the algae have not. Numerous reports of algal blooms (both freshwater and marine) have made the news. Eutrophication and anthropogenic inputs have altered the planetary algal landscape, and thus the algae, and those dedicated to their study, have a prominent role to play going forward. This is a global issue, and it is heartening to see so many attendees from around the globe at the meeting this year. Algae is a great unifying endeavor!

It has been one of the greatest pleasures I have had to serve as the president of this august society, and I am looking forward to having an opportunity to talk with many of you at next year's meeting.

With regards,

Dale Casamatta

PSA NAMES 2020 NORMA J. LANG FELLOW: DR. TREVOR BRINGLOE

Congratulations to **Dr. Trevor Bringloe** (University of Melbourne) who was awarded the 2020 Norma J. Lang Early Career Fellowship. Dr. Bringloe will receive $10,000 to support his research project entitled "Genomic insights into the evolution of the Northeast Pacific ribbon kelp *Alaria*." Dr. Bringloe will also receive $1000 every year of his three-year term as a Lang Fellow to attend the annual PSA meeting.

Dr. Norma J. Lang was a former PSA president and an internationally recognized phycologist who made many contributions to algal research and education over her illustrious career. To learn more about the Norma J. Lang Early Career Fellowship, visit the following PSA webpage: https://www.psaalgae.org/norma-j-lang-fellowships/

PSA now accepts donations through Paypal.
Please consider a donation to support PSA students and their research!
http://www.psaalgae.org/endowment-donations

Eclogae

By Stacy A. Krueger-Hadfield
With photos from Maggie Amsler, Sabrina Heiser, Heather Spalding, Taylor Williams, Will Ryan, and Stacy Krueger-Hadfield

Life tilted on its axis in mid-March. Instruction went remote. Research ground to a halt. Though review papers and syntheses were likely spawned, our phycological lives as we knew them were dramatically altered.

Jeff Morris asked if I'd write something uplifting about field work. For my lab, in precedented times, spring and summer directly translate to field work. While we dabble throughout the year, April to August is when we spin into high gear.

This year was *very* different. My post-doc and I were fortunate to be approved for some field work, complete with COVID SOP. Masks don't protect you from greenheads, but we were able to continue a longish term dataset.

One morning drinking coffee (alone and definitely more than six feet from the next human), I watched the sun rise over the marsh.

Sunrise with the smell of the marsh heavy in the muggy morning air. *photo credit: Stacy Krueger-Hadfield*

I reflected on 2020. It has certainly become a year for balancing joy, such as being at one of my favorite field sites, with the sadness of all the things that did and would not happen in what is tantamount to an *annus horribilis*.

I recently wrote a post for The American Genetics Association blog about an ode to mud (in my lab, we spend a lot of time in mud – turns out there are quite a bit of macroalgae in muddy places). In thinking about the few lines I'd pen here to introduce a selection of field work pictures from PSA members, I looked up synonyms for the word "ode."

I went down a rabbit hole and ended up looking at some of Virgil's poems. Several threads were loosely connected. An *eclogue* is a poem in which shepherds converse. Have you heard of the sheep on the North Ronaldsay that eat seaweed? Maybe I've been at home too long, but this led me to the title for this piece – *Eclogae*. The Latin title of Virgil's collection of 10 pieces literally means "selections."

Here's an algal *eclogae* of happier times and here's to dreaming of future phycological forays*:*

"My favorite PPE; the only mask needed is/was a scuba mask." — Maggie Amsler

photo credit: Sabrina Heiser and Maggie Amsler

Sabrina Heiser wearing a different kind of mask – reeling in a transect tape after video recordings and collections. Dive site next to a Gentoo penguin colony

photo credit: Aaron Galloway

Botanical Beach field trippers at PSA/ISOP 2018

photo credit: Stacy Krueger-Hadfield

Algal enthusiasts from the College of Charleston phycology class pose before collecting the invasive alga *Agarophyton vermiculophyllum* from the mudflat.

Photo credit: Heather Spalding

Heather Spalding photographs the newly discovered *Chondria tumulosa* overgrowing coral reefs at Pearl and Hermes Atoll, Northwestern Hawaiian Islands, 20 m depth.

Photo credit: Brianna Craig

Diopatra cuprea decorating with _Ulva_ and _Agarophyton vermiculophyllum_ with some phycologists in the background.

Photo credit: Will Ryan

Parking spot for phycologists in southern California

Photo credit: Stacy Krueger-Hadfield

Sargassum muticum in a tide pool at Wembury, near Plymouth, UK

Photo credit: Stacy Krueger-Hadfield

If you have phycological photos – send them to us and we'll upload them via social media!

Covid-19 from Antarctica to Alabama

By Maggie Amsler

7 February 2020

Real World: China reports 15,000 covid-19 cases and 545 deaths.

Palmer Station, Antarctica: UAB field team (including Station Science Leader Chuck Amsler and graduate student Hannah Oswalt) arrived December 2019 and labored two months to assemble experimental setup to study the effects of ocean acidification (OA) on macroalgal mesograzers (primarily amphipods). Today's long-scheduled cruise ship visit with primarily Asian passengers cancelled due to "an abundance of caution" regarding reports of a highly contagious virus reaching epidemic scale in China. Lots of the tourist acclaimed famous Palmer Station brownies to eat.

9 February 2020

Real World: China reports over 40,000 covid cases and 800 deaths. The US reports 13 cases.

Palmer Station: Sunday and our project has the day off - until noon. All future tour ship and national flag visits to station have been cancelled for the remainder of austral summer as novel corona virus continues to raise concern in the real world. Palmer Station begins its self-imposed 'ice-o-lation' and without left-over brownies from tourist visits.

18 Feb 2020

Real World: The US reports second known death from covid-19.

Palmer Station: Permission granted to zodiac over to tourist yacht in order to say hello to several friends on board. Oddly prescient bobbing along-side vessel to chat rather than going aboard to hug and visit. Social distance doesn't seem very social.

6 March 2020

Real World: UAB suspends international travel as covid-19 spreads. The US reports 330 covid cases and 10 deaths.

Palmer Station: Hot-tubbed with couple of folks after dinner – overcast sky but lovely light on glacier.

11 March 2020

Real World: PSA cancels the annual meeting in Rhode Island. The US reports 1200 covid cases and 38 deaths.

Palmer Station: Collecting dive at Southeast Bonaparte, great visibility, an unfriendly seal forced a not so leisurely exit.

12 March 2020

Real World: Covid-19 declared a pandemic. The US reports 1600 cases, 41 deaths.

Palmer Station: Another algal art and jewelry session in lab after dinner enjoyed by 7 station folk though a little more subdued than previous sessions given disturbing news of day.

14 March 2020

Real World: Chile prohibits cruise ships from docking in Chilean ports. UAB moves Limited Business Model – all classes moved online after extended spring break. The US reports 2800 cases and 60 deaths.

Palmer Station: Annual Art Show, Foodie Fest and Open Mic Night attended by most of 40 on station. Great event showcasing artistic talents, culinary flair, musical prowess – always a memorable social gathering.

18 March 2020

Real World: Chile closes borders for entry. All foreigners are subject to mandatory 14-day quarantine. The US reports 8700 cases and 104 deaths.

Palmer Station: The OA experiment has been running smoothly and operating within expected parameters. Another couple weeks and we will meet the planned 60-day experiment duration with plenty of time to dismantle the experimental setup and pack before our scheduled departure. However, station leadership believes that our departure will be delayed at least a couple weeks (and maybe considerably longer) given increasing world-wide travel restrictions due to growing corona virus-19 epidemic. Happy to stay here and run the experiment a little longer – no mask needed, no social distancing necessary, and plenty of toilet paper (?!).

Meanwhile, another global calamity will carry on mostly unmonitored in Antarctica as ice sheets break out, glaciers melt and surface waters warm.

19 March 2020

Real world: The US reports 13,000 covid cases and 195 deaths.

Palmer Station: Most inconceivably this Thursday afternoon we were informed that a vessel is being diverted from its 60-day cruise to effect the evacuation of all science parties next Tuesday. We have to end and dismantle our experiment, clean, dry and pack everything. An impossible mission!

23 March 2020

Palmer Station: All samples from OA experiment preserved for later analysis, all components of OA setup inventoried and packed for overwinter storage; all dive gear cleaned, dried, inventoried, and packed for shipment to Alabama or overwinter storage; lab spaces emptied and cleaned; personal gear packing and dorm room cleaning in process. Precious little sleep for last four days.

24 March 2020

Southern Ocean: The research vessel/icebreaker *Nathanial B. Palmer* sailed into harbor shortly after breakfast. All (weary) science teams transported to vessel after sharing multitudes of give 'em and get 'em while you can hugs of farewell.

27 March 2020

South Atlantic Ocean: Southern Chile visible off the port bow. No word on whether government will allow vessel to dock. Rumor has it that if denied we would sail the icebreaker north to California – at least a three-week journey.

28 March 2020

Punta Arenas Chile: Vessel allowed to dock, no personnel allowed to disembark. No word on whether government will grant entrance in order to get to airport and fly north. State Department is negotiating with Chilean officials. Health checks required.

30 March 2020

Punta Arenas, Chile: Vessel cleared by Health Department. Evening notification to pack for disembarkation tomorrow.

31 March 2020

Punta Arenas, Chile: All science teams transported to airport after being armed with N95 masks, latex gloves and hand sanitizer. Flight to Santiago on time and scary full. International terminal, typically bustling and jam packed, eerily quiet and practically deserted. Flight out of Santiago to US on time and jumbo jet quarter full and all passengers able to stretch across three seats to rest on the overnight flight.

1 April 2020

Miami Airport: Landed in an alien world of sparsely-peopled concourses, everyone masked, closed shops and restaurants. Date is ironic yet this is clearly no joke.

Birmingham, AL: Airport curbside greeting, at 6 foot distance, by colleagues/friends with Bio Department truck for us (Chuck and me) to drive ourselves home.

2 April 2020

Birmingham, AL: Returned truck to "limited business model" campus. Lab building eerily quiet and encountered few while gathering paper files and lab computers for use at home remote working.

11 May 2020

Birmingham, AL: Learned that our planned 2020-2021 field season at Palmer has been deferred at least a year as NSF and all national polar programs work to keep Antarctica covid-free.

28 July

Birmingham, AL: Attended first virtual PSA annual meeting rather than traveling to Providence, RI.

4 August 2020

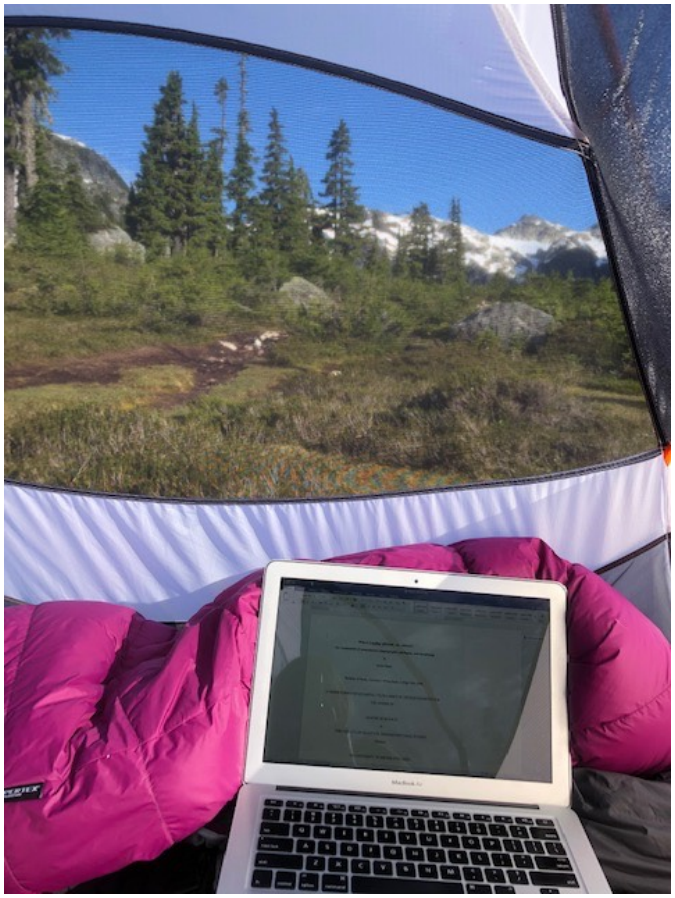
Birmingham, AL: Attended first virtual SCAR (Scientific Committee on Antarctic Research) rather than traveling to Hobart, Tasmania. Antarctica, a continent of science for all countries, remains covid-free yet like the rest of the world, is severely impacted. Science in this world's largest natural laboratory is largely cancelled and extremely limited due to covid concerns. Meanwhile, another global calamity will carry on mostly unmonitored in Antarctica as ice sheets break out, glaciers melt and surface waters warm.

International Airport Terminal Santiago, Chile
March 31 2020
Photo credit: Maggie Amsler

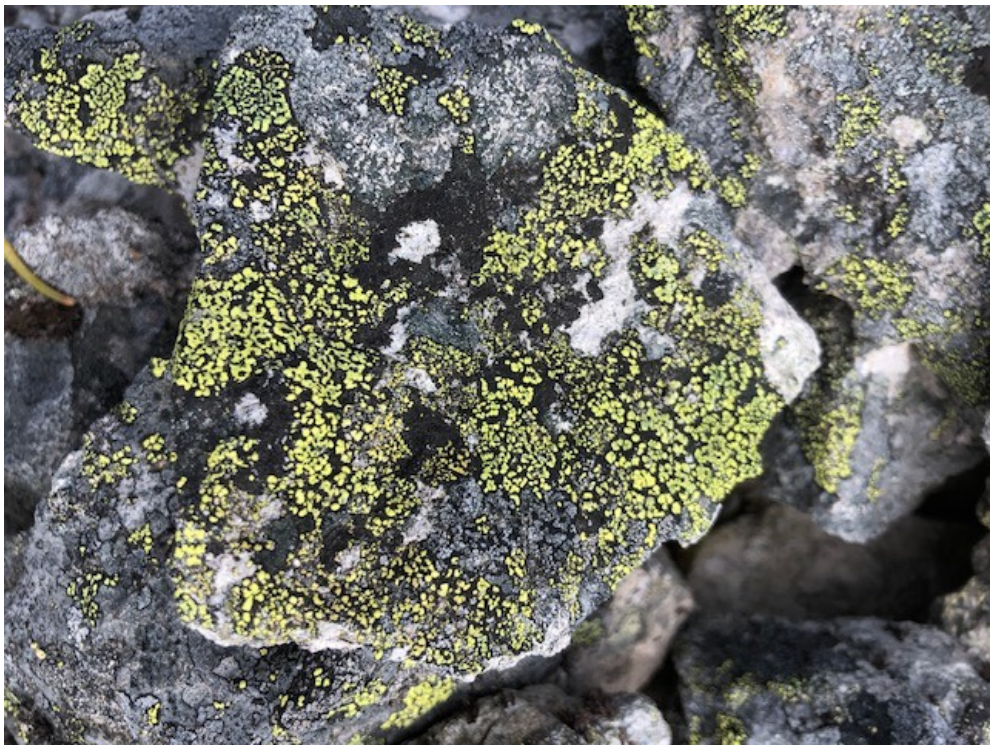
"WORKING REMOTELY"

photos and text by Soren Huber

While being being quarantined at home for months may be conducive to writing, it is not without some bouts of cabin fever. I have "coped" with this by backpacking on the less frequented trails in British Columbia, Canada, admiring other types of algal diversity, and "working remotely" on my thesis.



"Working remotely" from Brandywine Meadows, a hanging valley in British Columbia, Canada.



Lichen growing on a dry talus slope en route to Illal meadows.

Snow algae growing on the side of Jim Kelly (an andesite dome) in mid July.

Thank your local culture collection!

by Sarah DeVaul Princiotta, PhD
Assistant Professor of Biology, Penn State Schuylkill

Many of us phycologists take pride in our ability to maintain live cultures. Some of our strains require complex conditions with specific medium and a dense inoculum, while others are best described as "weedy," growing well despite our efforts to slow them. My research relies upon maintenance and manipulation of microalgae in culture. When my university shut its doors due to the COVID-19 pandemic, I was filled with all those now familiar anxieties; What if my family members get sick? However, I had phycological fears, too; **what if my algae get sick?** So, I did what any phycologist would do; I packed up my cultures and set up a makeshift growth chamber in my front window.

Unfortunately, my small collection did not fare well at home. Like their phycologist, we do better in the lab. This is where the hero of the story comes into play. Despite strict limitations on her hours, the technical curator at the **Canadian Phycological Culture Collection**, saved the day. **Heather Roshon and her staff** at the CPCC acted at rapid speed to replenish my strains, spending her limited hours to grow inoculant and later watching a heat wave spread over the east coast, waiting for the best time to ship. Just as I was able to gain access to my lab space again, my new cultures were ready. The purpose here is to remind us to *thank and support our phycological culture collections*. Our experiences with the COVID-10 pandemic and associated quarantine may have made us realize the things in life that are taken for granted, and for me that included my algal friends.

Thanks to all who shared their "Age of COVID" experiences. 2020 has been hard for everyone. Cheers to all of the intrepid phycologists out there who are keeping the dream alive until we sail together into calmer seas.

— Jeff Morris, PSA Communications

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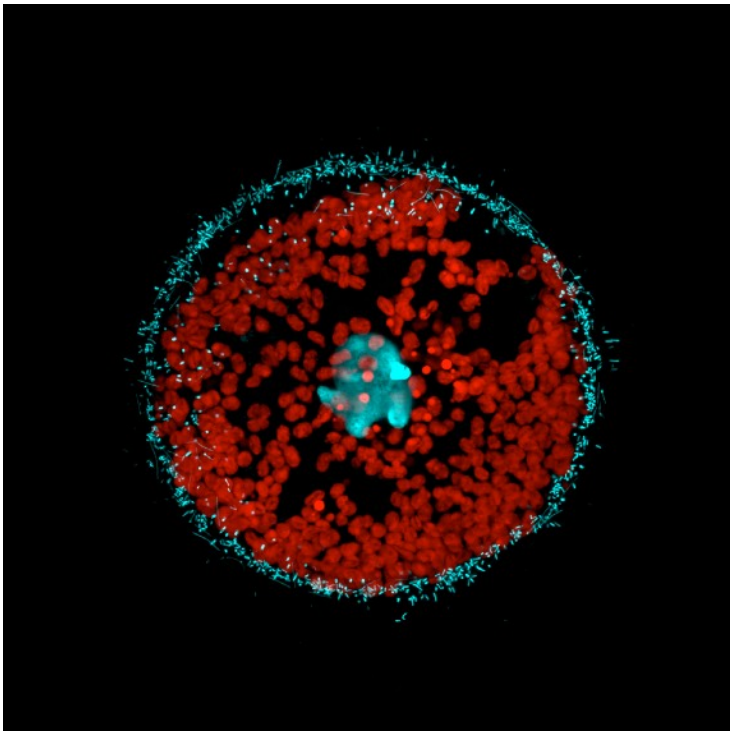
2020 Hilda Carter-Lund Algal Photography Contest Winners

This award was established by the British Phycological Society in recognition of Hilda Canter-Lund, whose stunning photographs will be known to many members. Her photomicrographs of freshwater algae combined high technical and aesthetic qualities whilst still capturing the quintessence of the organisms she was studying. There were two winners of the 2020 award: Davis Laundon and Michiel Vos.

Davis Laundon is a PhD student at the Marine Biological Association of the UK and the University of East Anglia, dedicated to applying quantitative microscopy tools to investigate the cell biology of understudied marine microbes. During his undergraduate degree in marine biology at the University of Plymouth (UK), Davis developed a fascination for marine microbiology and optical microscopy, and he is currently investigating how parasitic protists influence the growth dynamics of marine microalgae. In addition to his work, Davis has a passion for bringing microbes to life and to a broader audience through the creation of 'SciArt'.



"The Phycosphere"
Davis Laundon

"Even the smallest organisms can be a home for others. The thin layer of mucus surrounding phytoplankton cells, known as 'The Phycosphere', provides a rich microscale habitat for bacterial communities and is an example of the many microbe-microbe interactions that exist throughout the plankton. This example of the phycosphere is from a Coscinodiscus diatom, about a 10th of a millimetre in diameter, isolated from the English Channel (UK) with its associated bacteria. The diatom chloroplasts were imaged using their natural autofluorescence and are shown in red, while Hoechst-labelled DNA, representing the diatom nucleus and phycosphere bacteria, is shown in cyan. This image was taken with a Leica SP8 confocal microscope and is a maximum projection of a z-series. Diatom isolated by Angela Ward (MBA)."

Michiel Vos has an MSc in Marine Biology from the University of Groningen but proceeded to work on terrestrial bacteria in subsequent posts in Tübingen, Oxford and Wageningen, before moving to the University of Exeter Medical School (Cornwall Campus). Moving to Cornwall rekindled his love for marine biology, and he tries to spend as much time as possible submerged in rockpools. He blogs about his finds on his blog "an_bollenessor" which means 'the rockpool hunter' in the Cornish language, and posts on Instagram as @an_bollenessor.

***Carpodesmia tamariscifolia* (Bushy Rainbow Wrack) framed by *Himanthalia elongata* (Thong Weed) in a rockpool in Falmouth, Cornwall, U.K."**

Michiel Vos

"I took this photo of this stunningly beautiful iridescent Rainbow Wrack spring 2020 at a low tide when this rockpool was no more than a meter deep. This species is a perennial that forms a home to many animals, from sponges to tunicates and is often used by the Bull Huss to attach its egg cases to. Many seaweed species also grow epiphytically on Bushy Rainbow Wrack, such as the invasive red species Bonnemaisonia hamifera *on this photo. Photo taken using an Olympus OM-D E-M5 Mark II with an 8mm fisheye lens and with a single automatic strobe. The picture frame is about a metre deep."*

Current Status of the Study of Harmful Algal Blooms in Guatemala

Harmful algal blooms (HAB) are a subject of great scientific interest, and there are many international programs of various kinds that aim to study these events, which are very common on the central Pacific coast of Guatemala. Global information on the increase in the geographic distribution of toxic or harmful species has raised in the last decade. This increase in HAB is related to global climate change and the nutrient load, due to coastal pollution and eutrophication. All the efforts made in Guatemala have been framed within the issues of species identification, ecology and more recently ciguatera.

The history of the HAB studies in Guatemala begins in August 1987 with the report of a dinoflagellate bloom on the Pacific coast of Guatemala, where 193 intoxicated people were reported and 22 cases were fatal, due to shellfish consumption. The organism causing the poisoning was identified as *Pyrodinium bahamense var. compressum*, a species of microalgae that produces a paralyzing toxin. The same microalgae were reported again in an algal bloom, in November 2019.

As a result of this poisoning event that occurred in 1987, an inter-institutional group was formed that later through Government Agreement 412-91 dated July 16, created the National Commission for the surveillance and control of the Toxic Red Tide in Guatemala.

This governmental agreement in title IV point 4, referring to advisers, establishes that the **Center for Marine Studies and Aquaculture [CEMA] of the University of San Carlos de Guatemala** is part of the technical commission that will be in charge of monitoring biological conditions of the sea and the presence of harmful algal blooms, carrying out samplings, plankton analysis and determining the number of cells of these organisms to establish whether or not there is an algal blooming with repercussions on public health, supported by other technical instances.

In 1995, Dr. Yasuwo Fukuyo arrived in Guatemala with a Japanese Technical Commission to support the initial HAB program in Guatemala, and the Center for Marine Studies and Aquaculture of the University of San Carlos de Guatemala was invited to join this commission.

CEMA has monitored the Puerto Quetzal dock area since 1996 up to the present date, as a strategic indicator. It is one of the most constant programs that has been carried out on this subject. The red tide events registered during the last years in the coastal zone of the Pacific Ocean of Guatemala were mainly caused by the Bahamian dinoflagellate *Pyrodiniun*, in the years 1985, 1987, 1989, 1990,1995, 2001 and 2005, these data were recorded by Leiva-Cerezo in 2008.

A more recent report, in December 2018 by Josué García and collaborators, who published in the USAC science and health magazine, a case report of bloom of this same species. Besides, in November 2019, a study was made on sampling and identification of a bloom of *Margalefidinium polykrikoides* with the collaboration of the OBIMAR, the enterprise team of Portuaria Quetzal, the Fisheries and Aquaculture Regulations Directorate (DIPESCA), the Health Laboratory of the Ministry of Public Health and the National Institute of Seismology, Volcanology, Meteorology and Hydrology (INSIVUMEH).

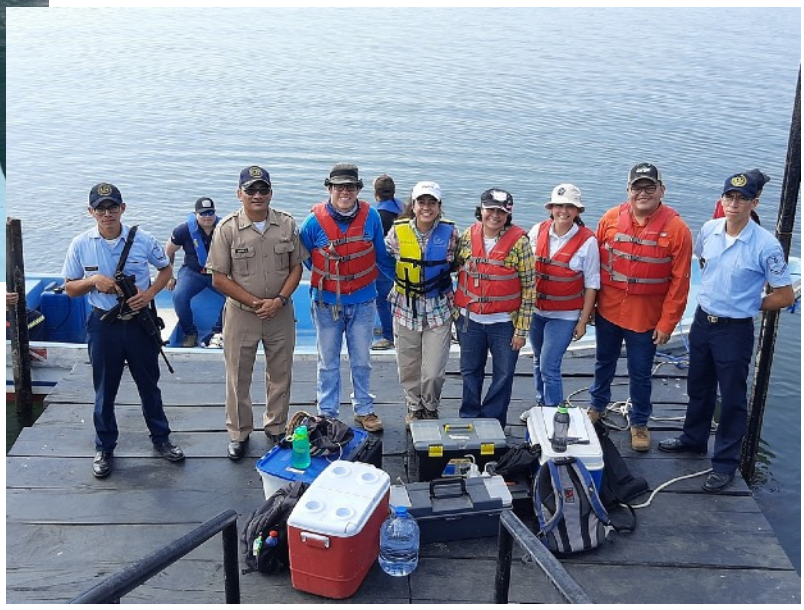
In the constant sampling program that is done in Puerto Quetzal, surface samples are carried out and the thickness of the photic zone is measured by means of a Secchi disk, to establish the collection levels in the water column, considering light penetration. As a determining factor, water samples are carried out with a 6.4-liter Van Dorn bottle at depths of 0.5, 2, 4, 6 and 10 m. A phytoplankton net with a mesh size of 23 microns is used and samples are fixed with Acid Lugol and stored in 500 mL KIMAX-KIMBLE glass bottles and stored in a cooler until they are processed in the laboratory.

At each sampling station, the ambient temperature is measured with a thermometer, and the transparency of the water is measured by the visibility of the Secchi disk. Likewise, at each monitoring site, the water temperature (0.1 ° C precision) and dissolved oxygen are recorded with an oximeter; pH (0.1 units), conductivity (1 µS cm-1 precision), and salinity will be recorded with a multiparameter probe. Additional parameters at each sampling point provided by INSIVUMEH are: surface layer chlorophyll, time, tide, lunar cycle, and currents.

In summary, Guatemala in recent years has made significant progress in the study of harmful algal blooms. Although it is true that it is only through academia and the efforts of government institutions that support us during algal blooms, we have advanced in unifying efforts in the institutions that work in the National Red Tide Commission to improve the response to these events.

We want to work with the dissemination of the issue within the coastal communities and population as an alternative response and monitoring tool. In the meantime, we are making connections to start work with molecular biology.

We see that the development of research on the subject of marine plankton is led by the projects that we are currently carrying out. We would like to have more collaborators and more projects in this area. **We hope to be able to generate new links with you all soon.**



Karla Paz-Cordón
Institute of Hydrobiological Research
Center for Marine Studies and Aquaculture
University of San Carlos of Guatemala

News from the PSA Board of Trustees

Hello PSA members,

I was reading my report from the Spring Newsletter and thinking about how things have changed so quickly during 2020. I sincerely hope that this newsletter finds you in good health and spirits during these most challenging times. The PSA BOT has been able to meet virtually twice since I last updated you. And, as a positive– we realized that virtual BOT meetings can be very productive (and we were able to find a time that could include Juliet Brodie in the UK as well as Joe Zuccarello in NZ – not an easy task!). Therefore, the BOT will most likely meet virtually once a year and then in person at the annual meeting. Having bi-annual meetings will keep us more connected and on task.

So, we have been working for the society over the past months. We have focused as always on the future of PSA and how we can best support the next generation of algal scientists. For students who received funding from the Endowment for Grants-in-Aid and Croasdale awards, Steve Murray, Fund Manager and Sophie McCoy, Chair of the Awards committee have worked with award recipients to be flexible in how those funds are dispersed. For example, the Croasdale recipients could not attend their planned field courses this summer and have had their funds carry over through 2021 in hopes that they will be able to use them next year. The BOT has also allocated some of the funding for Hoshaw awards that would have been spent in 2020 to be available for student travel to future PSA meetings.

An important task for the BOT each year is to review the award programs from the Endowment to determine whether they are meeting our goals. With input from the Awards committee, we determined that the Croasdale award amounts have been insufficient and have decided to raise them from $1500 to $2250 to cover more of the costs for attending field courses. This change will be implemented for 2021. There will be some changes with the applications for awards too. We thank the Awards Committee and Sophie McCoy in particular for designing new fillable forms and revising due dates to align better with students needs. All changes should be up on the PSA website soon.

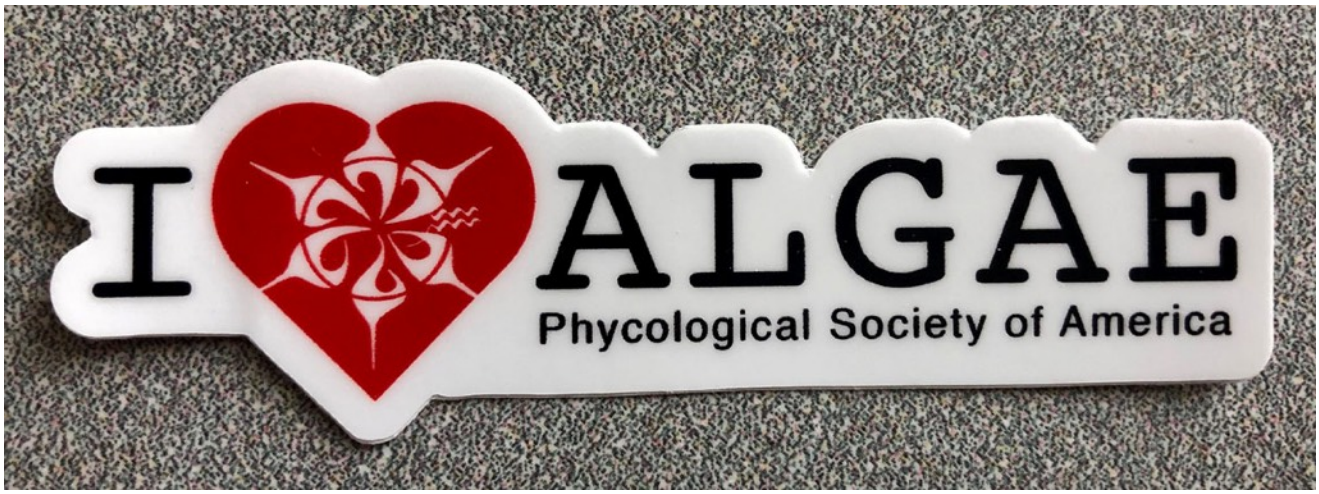
I hope you were able to join the virtual PSA meeting in July. I thought it was great and I am sure you will hear more regarding that meeting. I was part of a

breakout room about PSA awards for students – not only were we able to distribute information, but we also received some great suggestions on how to make our awards more accessible. Another breakout discussion was devoted to Equity, Diversity and Inclusion. An EDI committee at PSA has been formed, and the whole of the BOT looks forward to working with this committee as we seek to create an inclusive algal research community. I look forward to being able to share more in future newsletter reports.

As always, please feel free to email me – vis-chia@ohio.edu.

Cheers,
Morgan Vis
Chair, BOT

PS. I certainly do LOVE algae – thanks Bridgett Clarkston for the artwork:



Announcing the PSA Equity, Diversity, and Inclusivity Committee

In June 2020, the Phycological Society of America Executive Committee put out a call to request self-nominations for a committee on Equity, Diversity and Inclusivity (EDI) by July 15, 2020. As a society, we strive to be supportive and inclusive of all current and future members and endeavour to address systemic racism in our field and more broadly in science and the establishment of this committee is a critical first step. We are pleased to announce the following individuals are part of this committee:

Ranah Chavoshi
Bridgette Clarkston
Katy Davis
Robin Kodner
Patrick Martone
Sophie McCoy
Gisele Muller-Parker

The role of the EDI committee will be to examine how to embed equity, diversity and inclusion principles into our society and support PSA members who represent diverse cultures, ethnicities, nationalities, genders, sexual identities and disabilities. In addition, the EDI committee will advise the Executive Committee (EC) and Board of Trustees (BOT) on matters that relate to increasing access and support for diverse and racialized members of our society, which may include ways in which endowment funds could foster inclusivity and equity in PSA and phycology in general.

The EC has tasked the new EDI committee to consider a number of elements for the development of a terms of reference for the committee, including the committee structure and chair selection, appointment of future members, compensation for committee members and a description of the roles and responsibilities. The description and role of the committee for the PSA bylaws will be initially approved by the EC and then brought to the membership for a vote in Spring 2021. The formal committee enfranchisement will be announced at the PSA annual meeting in 2021.

We thank the members of this committee for their commitment to advancing issues of EDI in our society and being part of this critical first step.

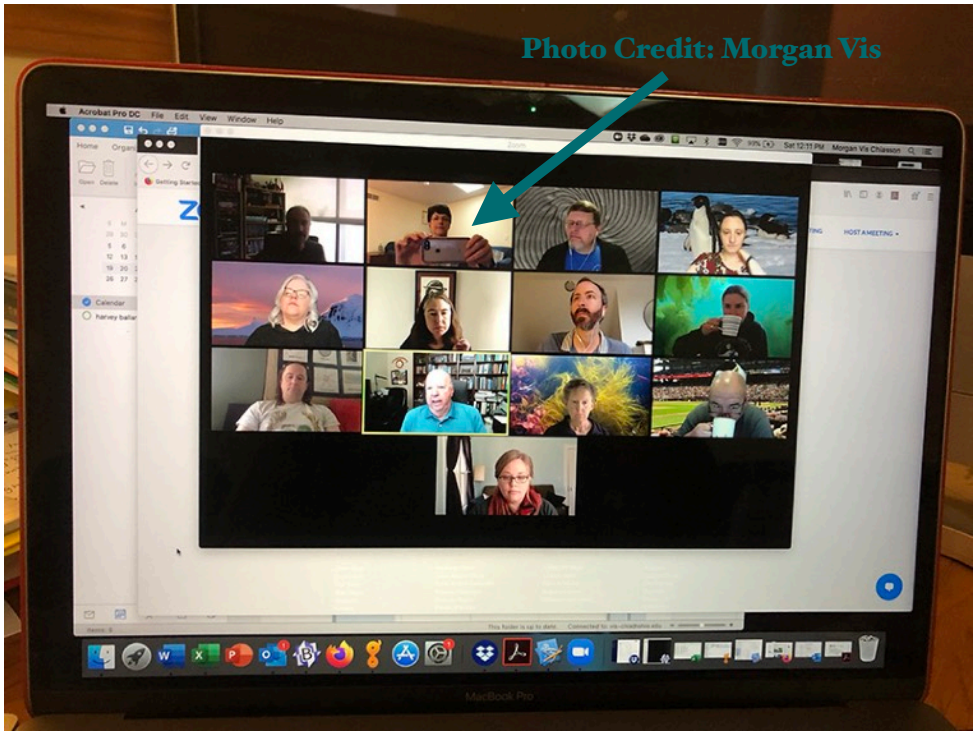
Thank you,
Kirsten Müller
PSA Past President

THE PSA 2020 ANNUAL MEETING

Like much else in our lives this year, the 2020 PSA Annual Meeting was — different. In early March, the PSA Executive Committee held an emergency meeting where we made the very difficult decision to cancel the in-person meeting, originally scheduled to be held in Providence, Rhode Island. In hindsight it seems like it should have been an easy call, but at the time it required a lot of soul searching. The number of US cases was still low, and the idea that we would still be dealing with a viral pandemic months later seemed like science fiction. Fortunately, biologists understand exponential population growth, and we were able to make the right call for the society.

On the other hand, the virtual meeting we ended up holding instead proved to be a great success, and let us try out format ideas that will help us produce more and better meetings — both in person and online — in the future. We had over 800 registered attendees to the virtual meeting, many of whom were not PSA members and had never before attended a phycology meeting. We got to meet new colleagues from around the world and from every continent except Antarctica (which was evacuated a couple of months before, as we saw earlier in the newsletter). If you're one of those new colleagues and you've since joined the society, welcome, and we hope you'll stick around for many more meetings to come!

Unlike most years, I don't have candid banquet or auction photos to share with you, but here's a fun snapshot of the PSA EC hard at work trying to make the best of the situation:



THE 2020 PSA AWARDS OF EXCELLENCE

In 2020 PSA gave two Awards of Excellence to scientists whose sustained records of scholarship and service have left a major impact on the field of phycology.

Professor Susan Brawley, School of Marine Sciences, University of Maine, received her BA at Wellesley in 1973 and her PhD at UC Berkeley in 1978. She has accumulated a body of research that is both expansive and deep, moving seamlessly from cell biology to algal ecology, and genomics. Dr. Brawley has a sustained record of publications and citations, including in numerous high impact journals such as the Journal of Phycology, the Proceedings of the National Academy of Sciences (US), Plant Physiology, and Molecular Ecology. Her seminal research started with the cell biology of *Fucus* zygotes, where she made a major impact, and her research has fundamentally advanced the field of macroalgal reproductive ecology. Likewise, her recent work on the genome of *Porphyra* is a significant addition to the field. Over her career at Vanderbilt University and the University of Maine, she has advised numerous M.S., Ph.D., and postdoctoral students, including some who are active in algal research and the PSA. Professor Brawley is an active member of the PSA, serving at one time as the Editor for the Journal of Phycology as well later as the President of the society. In terms of professional development, scientific impact, and society stewardship, Susan has made a remarkable impact on both the PSA and field of phycology in general.

Professor Craig W. Schneider, the Charles A. Dana Professor of Biology at Trinity College, Hartford, CT, received his B.A. at Gettysburg College in 1970 and his Ph.D. at Duke University in 1975. Dr. Schneider's research shows a remarkably productive record of publications despite working at a completely undergraduate institution. In fact, he becomes the first scholar from a small college to be awarded the AoE. Dr. Schneider also previously won another prestigious PSA prize, the Gerald Prescott Award, which is given to recognize scholarly work in English in the form of a published book or monograph devoted to phycology. This was in recognition of his 1991 book *Seaweeds of the Southeastern United States, Cape Hatteras to Cape Canaveral*, co-authored with Dr. Rick Searles. Professor Schneider's work has produced significant contributions to understanding the algal flora of mid-Atlantic states and Bermuda. Further, he has demonstrated a strong commitment to undergraduate mentorship in teaching, research and authorship at his home institute, Trinity College, with numerous former students going on to study algae in a professional capacity. Dr. Schneider has been a very active officer and member for the Northeast Algal Society since 1976, and a regular attendee at the PSA annual meetings. Despite being retired, Craig continues a steady record of algal publications and continues to leave an important impact on the field.

PSA AoE Recipient Craig Schneider on teaching at a small college

PROVASOLI AWARD

The Provasoli Award is given every year to recognize the best manuscript published in the Journal of Phycology. It honors Luigi Provasoli, the Journal's first editor. The 2020 Provasoli Award was given to:

Heroen Verbruggen, Rick Wetherbee, Chris Jackson, Sonja Repetti, Lesley Clementson, Joana Costa, Allison van de Meene & Simon Crawford. 2019. The golden paradox – a new heterokont lineage with chloroplasts surrounded by two membranes. J. Phycol. 55:257-78.

First Row: Heroen Verbruggen, Rick Wetherbee, Chris Jackson, Sonja Repetti

Second Row: Lesley Clementson, Joana Costa, Allison van de Meene, Simon Crawford

BOLD AND LEWIN AWARDS

As I watched the 3-minute talks presented at the virtual PSA this year, I was filled with awe, surprise, and the occasional chuckle. The student talks were as interesting and diverse as the algae we all passionately study. I commend the students for embracing the virtual format and expanding their communication skills. It was a new learning experience for me, too. Creating a compelling virtual talk is unlike an in-person venue, and requires different formatting, skills, and creativity for crafting a captivating and efficient presentation. I'd like to give honorary awards to all of the students that embraced the challenge and presented at PSA this year (even if their advisors might have twisted their arms to do it).

Next year, the prestigious student awards competition will resume at the PSA meeting, even though it will be a virtual meeting. The student awards include oral presentations in the Bold Award and poster presentations for the Lewin Award. A key advantage of the Bold Award is the undivided attention of the entire PSA meeting – this is the best opportunity for students to present their research to the entire phycological community at the beginning of the meeting, and establish their stellar career (or students can do it for the monetary award…perfectly acceptable). It's also an excellent networking opportunity for a student's next graduate experience, post-doc, or job. The Lewin poster competition now includes both undergraduate and graduate students, and provides a forum for students to shine in a student-friendly environment. Below are detailed descriptions of each competition.

Bold Award ($1000) – ORAL presentation: Graduate students who are PSA members, regardless of nationality, are eligible to compete for the Bold Award, as well as former students within twelve months of completion of their degree. The work presented must be that of the student, must be presented orally by the student in English, and should be a complete or nearly complete project. Only one presentation may be made per year and students may enter no more than twice, and not in successive years. Bold awardees receive special consideration for an article published in the *Journal of Phycology*. More information can be found here: http://www.psaalgae.org/bold-award/

Lewin Award ($500) – POSTER presentation: Graduate or undergraduate students who are PSA members, regardless of nationality, are eligible to compete for the Lewin Award, as well as former students within twelve months of completion of their degree. Posters with multiple authors are permitted, but the student competing for the award must be the first and presenting author. Only one poster per student per year may be entered in the competition. If meeting rules allow multiple posters to be contributed by the same presenting author, the student must designate which poster is to be considered for the award. More information can be found here: http://www.psaalgae.org/lewin-poster-award/

We are also looking for judges to participate in next year's student awards competition. Contact PSA Student Awards Committee Chair, Heather Spalding (spaldinghl@cofc.edu) with any questions. See you next year!

Heather Spalding
Department of Biology
College of Charleston
Student Awards Committee Chair

A note about the 2021 PSA Annual Meeting

Greetings PSA-o-philes,

After much careful deliberation, the PSA Executive Committee has decided that **the 2021 meeting, scheduled for July in Providence, Rhode Island, will be held virtually**. The Annual Meeting is the highlight of the phycological year for many of us, affording an opportunity not just for the presentation of scientific discoveries, but also a chance to connect with colleagues, collaborate on projects, and directly communicate with some of the top algal minds of the world. Given all of that, we have still elected to go virtual for two main reasons.

First, without a doubt the greatest strength and asset to the PSA is our members. Thus, we look to practice every endeavor to ensure the safety of our community. No one knows when a safe, efficient vaccine will be available, nor when the protective benefits of such a therapy will exist. While it seems like years away, the meeting would be only 10 months from now, so we proceed with an abundance of caution.

Second, you may be asking "well, why cancel now? Why not wait and see how things develop over the next several months"? That boils down to logistics. First, planning a meeting, even a virtual one, requires many hours of behind the scenes work. Given that most of our members and officers are in academic positions, coupled with the unprecedented changes wrought upon Universities as a result of Covid, all of our plates are rather full. Thus, deciding and implanting a new plan in a quick, efficacious manner is of paramount importance. Second, there are numerous restrictions on crowds and meetings in RI at this time. Congregations of more than 75 are forbidden, and group gathering are greatly regulated. Many of the things we love so much about the meeting, such as the banquet, social interactions, coffee breaks, etc., will all be significantly, negatively impacted if things stay as they are currently. The hotel has very stringent hygiene practices in place, with no possible way of knowing when such endeavors will be relaxed. Third, there is a financial component to consider. Many of our universities are facing significant budgetary constraints, so travel funds for next year will undoubtedly be greatly curtailed or eliminated for our members. This translates to less participants at the annual meeting, and some groups, such as graduate students, will likely face even more financial difficulties. Lastly, given the rather poor handling of the viral expansion by the US, many of our international members will likely not be able to attend due to travel restrictions. Our society is truly

global, with many of our members from Canada, Asia, and Europe. These folks will likely face significant hurdles, if they can come at all.

These are all potent reasons for canceling the physical meeting, but they also allow us an unexpected opportunity. By canceling now, the dedicated PSA Program Committee can begin the work of crafting a truly exceptional virtual meeting instead! We had fantastic success with the abbreviated meeting this summer, with >800 algal-enthusiasts registered for the two-day event. Now that we have decided to forge ahead with the on-line version, we can dedicate ourselves to an exceptional meeting. We plan on having all of the traditional PSA meeting staples: the Bold Award Presentations, poster sessions, invited talks from our members, world-class Plenary speakers, etc., but in a new format.

This virtual meeting also allows us an opportunity to reach an even wider swath of the phycological community. We are working on numerous endeavors to broaden the appeal and accessibility of the PSA meeting for everyone, while simultaneously strengthening the presence of the community. Algae will be at the forefront of many human endeavors in this Age of the Anthropocene, from carbon budgets, to harmful algal blooms, to aquiculture, to biotechnology. By making the decision this early, we plan on expanding and growing our presence, and articulating the awesome role of algae in the natural world.

Please check out the PSA website for additional details in the near future. We hope to virtually see everyone at next year's epic event!

Mark your calendars for the second Joint Aquatic Sciences Meeting — May 16-20, 2022!
More information will be posted on the meeting website as it becomes available:

https://jasm2022.aquaticsocieties.org/

Phycological Society of America
Annual Business Meeting of the General Membership
2020

Usually the summer/fall Phycological Newsletter contains the minutes of the PSA Business Meeting, which is held every year during the Annual Meeting and is open to all members. Because the Providence meeting was cancelled this year, we did not have a normal Business Meeting and therefore there are no minutes to publish. Instead, we present reports from the Endowment Fund Manager and the Treasurer, as required by the PSA Bylaws, in order to provide transparency to the membership regarding the state of the Society's finances.

Endowment Fund Manager's Report
Submitted by Steve Murray
July 2020

The Endowment continues to grow even during these fiscally uncertain times and to provide the annual earnings needed to fund the society's student support and other award programs. Endowment assets, which are entirely in the form of fixed income generating holdings, had a market value of $3,136,072 as of June 30, 2020, an increase over the $3,053,006 recorded at the end of the 2019 calendar year. However, projected earnings from the Endowment fell from 2.89% at the end of 2019 to 2.33% for 2020. This means that we will earn less during 2020 to support our 2021 distribution profile than originally planned. However, because of its cancellation due to COVID-19 concerns, Endowment distributions associated with our 2020 annual meeting were not made. These funds will be used in 2021 to offset the projected decrease in 2020 earnings and to increase the amounts allocated to Hoshaw Student Travel Awards to $27,000 (up from $18,000) and Croasdale Student Awards to $9,000 (up from $6,000). So, we will continue to fund our full portfolio of awards and programs in 2021 and also allocate more monies for students wishing to take algae-related field courses and to attend our annual meeting in Providence, Rhode Island.

The Treasury Reserve, an account also managed by the Endowment Fund Manager, operates under a more balanced investment strategy that assumes more risks due to its mixture of investment assets. The June 30, 2020, market value of the Reserve was $150,971 down from $157,184 as of December 31, 2019 due to losses in market value of investment assets. Of these funds, $48,024 (31.8%) have been designated for future AlgaeBase support. Except for banking fees, no expenditures are planned from the Treasury Reserve during 2021.

Treasurers Report for Annual Meeting
Submitted by Julie Koester
July 2020

Our treasury balances are healthy and maintained in two accounts (Table 1). These accounts are used to fund the Journal of Phycology, the President's Symposium, and Local Host and Student Symposia of the Annual meeting in additional to committees and the hosting of AlgaeBase on Amazon Web Services.

Table 1. July 2020 Account Balances

Treasury (Central Bank of the Midwest) Total		**$235,667.41**
	Checking	$185,581.36*
	Savings	$50,086.05

2020 Income: PSA accounting runs on the calendar year. Our two major sources of income are the journal and annual meeting (Table 2). We have four lines of income from Wiley: 1) the 23 % royalty for 2019 was disbursed to us in the first quarter of 2020 and to date, 2) we have received the three quarters of the Editorial Office credit, 3) $5000 for the Development Fund, and 4) the $2500 Award. The 2019 Annual Award Grant was disbursed as Best Student Paper Awards in 2020. A treasury surplus of $30,000 from 2019 was transferred to the endowment.

Table 1. 2020 Year-to-Date Treasury Income

Total	**$190,2020.95**
Interest on Savings and Checking	$32.95
Wiley – Annual Award Grant	$2500.00
Wiley – Development Fund	$5000.00
Wiley – Editorial Office Credit	$85,680.00
Wiley – 2019 23% Royalties	$96,990.00

2020 Expenses: With the cancellation the in-person annual meeting our expenses are low this year (Table 2). We are now using the WildApricot platform, for which we pay monthly subscription fees, to manage registration of our future meetings. We will have a treasury surplus this year as well.

Table 2. 2020 Year-to-Date Treasury Expenses

Total	**$53,813.02**
Journal - Editorial Office	$38,122.48
Wiley Award (Student Papers)	$2,504.99
Annual Meeting Expense	$1,599.56
Committees	4724.25
AlgaeBase	$4,445.99
Membership Dues	$325
Legal/Bank Charge/Accounting	$2,090.75

Upcoming PSA Awards & Grants

PSA Award of Excellence

The Phycological Society of America is soliciting nominations for one or more Awards of Excellence. Recipients of the 2021 Award of Excellence will be chosen on the basis of their sustained scholarly contributions in, and impact on, the field of phycology, through a distinguished record of scholarly activity. Nominations will be welcomed for all fields of research on algae and also should highlight the candidate's service to the PSA and/or other phycological societies. The Award is a career achievement award for a living phycologist. Membership in the PSA is not a requirement for nomination. See previous awardees at http://www.psaalgae.org/award-of-excellence/.

Nomination package due:

January 31, 2021

Nomination packages should include a single nominating letter from a PSA member highlighting the reasons for the nomination. The candidate should acknowledge his/her nomination and also provide a complete C.V. (including information relating to teaching and service). The committee requests 4 additional names (and e-mail contact information) submitted to provide letters of support. The nominator is required to confirm that these individuals have agreed to write letters within two weeks of being contacted by the Committee. Nominations received for 2020 for nominees who were not selected in 2020 will automatically be reconsidered in 2021. Updates to nomination packages submitted in 2020 are not required but an updated C.V. can be substituted for the prior version if submitted by the nomination deadline. Nominations made prior to 2020 will not automatically be reconsidered but completely new nomination packages for such candidates will receive full consideration.

Nominations will be welcomed for all fields of research/teaching on algae and should highlight the candidate's service to PSA and/or other phycological societies. Inquires and/or electronic nomination materials should be directed to Rick Zechman, Humboldt State University. All nomination materials should be electronic files submitted by e-mail to rick.zechman@humboldt.edu.

In order to receive full consideration for the award that will be made at the 2021 annual meeting of the PSA, the complete nomination package must be received by January 31, 2021.

Checklist for nomination
1. Nomination letter from PSA member
2. Letter from nominee acknowledging the nomination
3. A current C.V. provided by the nominee
4. Names and contact information for 4 potential referees.

The committee will solicit letters directly, but the referees must have confirmed their willingness to provide a letter within two weeks of being contacted. If they fail to provide a letter, the Committee is under no obligation to search out new referees.

PSA Research Grants

Deadlines:
GIAR: November 1
Croasdale: Feb 1
Hoshaw: No in-person annual meeting in 2021

The PSA Grant-in-Aid of Research program will be accepting applications due Nov. 1. This program supports graduate and postdoctoral research in any area of phycology. The Hannah T. Croasdale Fellowship deadline has been moved up to Feb. 1 to allow students to better plan for summer field courses. This program supports student attendance at phycology courses held at field stations. If you are unsure if your proposed course meets eligibility, please email Sophie McCoy well ahead of the deadline at smccoy@fsu.edu. Some examples from the last few years include the Marine Botany course at Friday Harbor Labs, Ecology and Systematics of Diatoms or Ecology and Systematics of Algae held at Iowa Lakeside Lab, or similar.

The Student Grants Committee is seeking new members! Please nominate yourself or a colleague by email to Sophie McCoy at smccoy@fsu.edu. We are seeking up to two new committee members (post-PhD), and one graduate student member (MS or PhD). In your nomination email, please include your current career stage, institution, and a few key words for your expertise (e.g., diatoms, ecology), as well as a brief (one paragraph only) explanation of your motivation and qualifications to join the committee. Students, please copy your academic advisor on your nomination email and ask them to reply all to approve your nomination to the committee.

The Gerald W. Prescott Award

Please consider nominating a book for The Gerald Prescott Award. The Prescott Award recognizes scholarly work in English in the form of a published book or monograph (including edited volumes and e-books) devoted to phycology and published in 2019 and 2020. The award will be presented at the 2021 Annual Meeting.

NOMINATION DEADLINE: APRIL 1, 2021

Nomination letters should be sent to Deborah Robertson, Clark University
debrobertson@clarku.edu

In Memoriam

Robert G. Sheath 1950-2019

It has been a great sadness for the phycological community with the passing of Bob Sheath. Bob was a colleague, mentor and friend. He will be remembered for his research and teaching accomplishments, his administrative acumen and his mentorship of students.

He received his B.Sc. and Ph.D. from the University of Toronto. After being a postdoctoral fellow at the University of British Columbia, he held numerous academic positions at the University of Rhode Island, Memorial University of Newfoundland, University of Guelph and California State University San Marcos. His administrative career included being a Department Chair, Dean and Provost.

Much of his research centered on understanding the evolution, ecology, biogeography and systematics of freshwater red algae. He traveled extensively in North America from the arctic tundra to tropical islands collecting material for publications on the stream floras and adaptations to these environments. In recent years, his research lab at California State University San Marcos was established as Primary Algae Lab for the Surface Water Monitoring Program of the California Water Boards, focused on soft-bodied algae as bioindicators of stream water quality. That work led to new red and green algal, as well as cyanobacterial species being described. Overall, he published over 150 peer-reviewed journal articles and book chapters. He co-wrote or co-edited four books, *Freshwater and Marine Plants of Rhode Island*, *Biology of the Red Algae* and *Freshwater Algae of North America: Ecology and Classification*, 1st and 2nd editions.

Throughout his career, he was an ardent supporter of PSA and attended many of the annual meetings until recently. In 1976, he won the Harold C. Bold Award as a graduate student. He served on various PSA committees including the Publications, Membership, Grants and Fellowships, Education and Award of Excellence. In 1986, he co-hosted the PSA meeting in Rhode Island serving as program chair and field trip leader. He went on to serve as Vice-President/President/Past

President in 1990-1992. He served one term on the Board of Trustees (2001-2005). His most recent and most noteworthy role for the society was as Editor for the *Journal of Phycology* for six years (2006-2011). It should be noted that not only did Bob commit considerable time and effort on behalf of PSA, but he also encouraged his students to become involved in PSA. In 2019, Alison Sherwood was past President, Kirsten Müller President and Morgan Vis served as Chair of the Board of Trustee; all three were PhD students of Bob Sheath.

As a student and colleague of Bob's, we can attest to his 'lead by example' approach to mentoring and research collaboration. Recently, we were finishing a manuscript together and discussing plates of photomicrographs. Both of us were thinking independently, 'would these measure up to Bob's standards?' – the high bar we aim to achieve. Bob always set the bar high for himself and therefore his collaborators, but the great thing is he was always there willing to help you achieve it as well.

Morgan Vis & Rosalina Stancheva

Note: a more complete 'in memoriam' will be published elsewhere.

Ioannis Tsekos 1936-2020

The Hellenic Phycological Society (HEL.P.S.) expresses its deep sorrow about the passing away (June 28, 2020) of its colleague Dr. Ioannis Tsekos, Professor of Biology at the Aristotle University of Thessaloniki, who was a founding member and president of the Board of Directors of HEL.P.S.

Professor Ioannis Tsekos was born in 1936 in Edessa, a city in Central Macedonia, Greece, where he completed his secondary education in 1955. He then studied at the Department of Natural Sciences of the Aristotle University of Thessaloniki, where he graduated with honours in 1959. In the period 1962-1965, he worked as an Assistant and in the period 1966-1970 as a Curator at the Botanical Laboratory of the Aristotle University of Thessaloniki. In 1966 he received his doctorate in Plant Cell Physiology, while in 1970, he was elected Lecturer and in 1973 Assistant Professor of Botany. In 1975 he was elected Professor and Director of the Botanical Laboratory. In 1982-1984 and 1995-1997, he was elected President of the Department of Biology of the Aristotle University of Thessaloniki. In 2005 he retired and was elected Emeritus Professor.

During his career, he was trained for a total of five (5) years at the Universities of Hamburg and Heidelberg, Germany, and at the University of Texas at Austin, USA, as a fellow of the German Academic Exchange Foundation (Deutscher Akademischer Austaustdienst, DAAD), the Alexander von Humboldt Foundation, and the Fulbright Foundation, respectively. He was invited speaker of numerous foreign universities, such as Las Palmas (Canary Islands, Spain), Kiel, Marburg, Giessen (Germany), Trieste (Italy), Kluje (Romania), Oxford (United Kingdom), Bonn (Germany) and others.

His research interests included physiology, structure, and function of subcellular components and especially cell membranes, using Rhodophyta as model organisms. On these subjects, he published more than 120 papers in peer-reviewed scientific journals. He also presented more than 60 papers at scientific conferences, in many of which he was an invited speaker. In recognition of his important and diverse work he was awarded the Panhellenic Biology Award by the Empirical Foundation in 1988. In 2002, he was elected a full member of the European Academy of Sciences (Headquarters of the European Academy, based in Brussels). He participated in 23 research projects funded by Greek and international organizations, which also included funding for significant enhancement of the Botanical Laboratory with basic equipment.

Professor Ioannis Tsekos, in the more than 40 years that he served in the Botanical Laboratory of the Aristotle University of Thessaloniki, taught and trained hundreds of undergraduate students of the Departments of Physiology, Biology, Pharmacy, Chemistry, Veterinary Medicine, Forestry, Agriculture and Medicine, but also students from the University of Thessaly and the Technological Institution of Thessaloniki, as well as the training schools for secondary education teachers and officials. The courses he taught were General Botany, Morphology, Anatomy and Plant Physiology, Phycology, Plant Cell Structure, Hydrobiology and Ecology. In addition to the above, he taught in the postgraduate program of the Department of Biology of the Aristotle University of Thessaloniki and supervised 11 PhDs, as well as a number of dissertations at other levels. His educational activity also includes a remarkable work of writing, with six books, five of which are educational books on Botany.

He participated in the organization of many scientific meetings and conferences, most notably the "1st Balkan Conference on Botany" (September 1997) and the "7th World Congress of Phycology" (August 2001), at both of which he served as Chairman of the Organizing Committee with success at the premises of the Aristotle University of Thessaloniki.

On behalf of HEL.P.S.,
Sotiris Orfanidis
President

The Phycological Society of America has instituted a Legacy Society to help individuals make a lasting impact on the Society by including it in their estate planning. If you are interested in arranging a bequest to the PSA Legacy Society, please contact our treasurer, Julie Koester.

BOOK TITLES

Diatom Monographs
Edited by Andrzej Witkowski. Volume 19: Reavie, Euan D. and Norman A. Andresen: Monoraphid and Naviculoid diatoms from the Coastal Laurentian Great Lakes. 2020. 33 pls. 303 p. gr8vo. Hardcover. (ISBN 978-3-946583-20-2). EUR 92.00

This volume contains two separate chapters.

Chapter 1: Reavie, Euan D.: Monoraphid Diatoms from the Coastal Laurentian Great Lakes. 18 pls. 101 p.

Abstract: This monograph contains descriptions of taxa from the diatom genera Achnanthes, Achnanthidium, Platessa, Psammothidium, Rossithidium, Planothidium, Karayevia, Eucocconeis, Cocconeis and Rhoicosphenia from periphytic and surface sediment samples in the coastal ecosystems of the Laurentian Great Lakes. We provide light micrographs of diatom taxa recorded in 207 samples from 106 wetlands, embayments, high-energy and deep, nearshore locales of the five Great Lakes. We characterize 79 taxa. For the 50 more common taxa we characterized lake and habitat specificity, modeled optima for phosphorus and chloride and tolerance to coastal anthropogenic stressors.

Chapter 2: Reavie, Euan D. and Norman A. Andresen: Navicula from the Coastal Laurentian Great Lakes. 15 pls. 202 p.

Abstract: This monograph contains descriptions of taxa from the diatom genus Navicula from the coastal ecosystems of the Laurentian Great Lakes. We provide light micrographs of diatom taxa recorded in 207 samples from 106 wetlands, embayments, high-energy and deep, nearshore locales of the five Great Lakes. Diatoms were identified from periphytic and surface sediment samples. The taxonomic and iconographic sections of this book include descriptions and illustrations of the taxa encountered, as well as autecological information when available. 26 new species are described.

Balogh International - New Spring Algae Books #1

The Curious World of Seaweed. Josie Iselin. 2019. ISBN: 978-1597144827. 256 pp., illustrated. Hardcover. $35.00

arine algae are the supreme eco-engineers of life: they oxygenate the waters, create habitat for countless other organisms, and form the base of a food chain that keeps our planet unique in the universe as we know it. In this beautiful volume Josie Iselin explores both the artistic and the biological presence of sixteen seaweeds and kelps that live in the thin region where the Pacific Ocean converges with the North American continent—a place of incomparable richness. Each species receives a detailed description of its structure, ecological importance, and humans' scientific inquiry into it, told in scientifically illuminating yet deeply reverent and inspired prose. Throughout the writings are historical botanical illustrations and Iselin's signature, Marimekko-like portraits of each specimen that reveal their vibrant colors—whether rosy, "olivaceous," or grass-green—and whimsical shapes. Iselin posits that we can learn not only about the seaweeds but also from them: their resilience, their resourcefulness, their poetry and magic.

Diatom Monographs, Volume 19
Monoraphid and Naviculoid diatoms from the Coastal Laurentian Great Lakes.
Euan D.Reavie & Norman A. Andresen. 2020. 303 pp., 33 plates. Hardcover. $135.00 (Import shipping costs included)

This volume contains two separate chapters:

Chapter 1: Monoraphid Diatoms from the Coastal Laurentian Great Lakes.

Abstract: This monograph contains descriptions of taxa from the diatom genera Achnanthes, Achnanthidium, Platessa, Psammothidium, Rossithidium, Planothidium, Karayevia, Eucocconeis, Cocconeis and Rhoicosphenia from periphytic and surface sediment samples in the coastal ecosystems of the Laurentian Great Lakes. We provide light micrographs of diatom taxa recorded in 207 samples from 106 wetlands, embayments, high-energy and deep, nearshore locales of the five Great Lakes. We characterize 79 taxa. For the 50 more common taxa we characterized lake and habitat specificity, modeled optima for phosphorus and chloride and tolerance to coastal anthropogenic stressors.

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Bibliotheca Diatomologica, Band 67

Diatoms in the wetlands of Southern Iraq. Adil Y. Al-Handal & Maitham Al-Shaheen. 2019. ISBN: 978-3-443-57058-3. 252 pp., 652 figures, 62 plates, 1 map. Paperback. $181.00 (Import shipping costs included)

The authors document the diatom species composition and ecology in the two major water impoundments of Southern Iraq, the Mesopotamian Marshes and Shatt Al-Arab River. Based on light and scanning electron microscopy investigations, 293 taxa are documented, including the description of three new species. The taxa treated herein were collected from a variety of habitats over a period of 15 years. Diatom assemblages consist of a mixture of freshwater, brackish water and marine taxa. Many diatom taxa that have disappeared in recent years are also documented in this volume. One reason for their disappearance is the high salinization of the Mesopotamian Marshes and Shatt Al-Arab River areas resulting from extremely low freshwater discharge from Euphrates and Tigris Rivers which allowed the seawater front to reach these regions. Species belonging to previously recorded genera such as Eunotia and Diatoma are no longer present in this area. Therefore, this work also is a documentary record of the diatom flora of the wetlands of Southern Iraq during the past 15 years and not only provides an insight into the present state of research but preserves records and findings from taxa no longer present in Southern Iraq, due to human driven ecological impacts.

Algae of Australia: Marine Benthic Algae of North-western Australia. Volume 2 — Red Algae. John H. Huisman. 2018. ISBN: 9781486309542. 688 pp., color photos, illustrations, & maps. Hardcover. $174.95

Although not as conspicuous as the larger brown algae, the red algae are typically more diverse, with the number of species in any location more than twice that of the green and brown algae combined. This volume is an authoritative floristic account of the marine red algae of north-western Australia and includes 158 genera and 351 species, with 7 genera and 88 species newly described.

Each taxonomic level, from division to species, is fully described, incorporating current nomenclature, morphology, keys, and numerous figures, many in color. These two volumes represent the first detailed accounts of the marine plants of tropical Western Australia and document numerous taxa newly recorded for the region.

Seaweeds of Britain and Ireland: Second Edition. Francis Bunker, Juliet A. Brodie, Christine A. Maggs, and Anne R. Bunker. 2017. ISBN: 9780995567337. 312 pp., color illustrations, glossary. Paperback. $24.95

The first edition of Seaweeds of Britain and Ireland has proved invaluable to an enormous number of people, not just volunteer Seasearch divers and snorkellers, and this eagerly awaited second edition will no doubt prove to be equally as popular. The aim of this book is to introduce the reader to the wonderful marine environment around Britain and Ireland, and improve identification of the wealth of seaweeds so often overlooked.

Exploring Britain's Hidden World: A Natural History of Seabed Habits. Keith Hiscock. 2018. ISBN: 9780995567344. 272 pp., color illustrations, glossary. Hardcover. $32.50
Keith Hiscock describes the incredible variety of marine life that exists around Great Britain, providing a foundation of knowledge for those interested in the natural history of the shallow seabed. He explains how findings are gathered and organised, as well as showing what is out there and how it works. Fascinating, beautiful and often fragile, the habitats and marine life described are essential to the health and productivity of our oceans. Without an adequate, shared understanding of what and where they are, how can we identify and protect them?
Exploring Britain's Hidden World is the culmination of 50 years of research by the author to better understand where different subtidal seabed habitats occur and how their associated marine life has come to exist. That quest draws on a rich vein of knowledge obtained by many naturalists, scientists and divers who, for almost 200 years, have described seabed communities and sought to understand their structure and function.

The Diver's Guide to Marine Life of Britain and Ireland: Second Edition. Chris Wood. 2017. ISBN: 9781999581107. 312 pp., color illustrations, glossary. Paperback. $25.95
Completely revised and expanded this Second Edition covers almost 300 individual species and groups of species seen underwater, from tiny fragile sea spiders to the massive planktonfeeding Basking Shark.
Features of the new edition include:
● 265 individual species descriptions, each with information on habitat, size, depth range and distribution in easy to use icon format
● Text emphasising the key features for identification of each species and possible confusions
● Underwater photographs showing each species as the diver or snorkeller would see it
● A unique 'confidence guide' to identify which species are easily recognised and which are likely to require confirmation
● Over 30 additional groups of plants and animals that cannot be identified individually underwater, but can be important features of the living community
● Information on marine habitats, conservation status and nonnative species in British and Irish waters

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EMPLOYMENT

Postdoctoral Researcher

The New Mexico Consortium (NMC) is seeking a talented and enthusiastic Postdoctoral Researcher in algal biology. This is a full-time position with benefits (health, dental, life, disability and retirement plan), staring in the Fall of 2020. The incumbent will work under the direction of Dr. Alina Corcoran in the Molecular Biology Program at New Mexico State University in Las Cruces, NM.
The researcher will be responsible for tracking algal trait drift/evolution in the lab and field and supporting field experiments in open raceway ponds. The minimum qualifications for the position include:

- a Ph.D. in biology or other relevant discipline
- strong working knowledge of biology, ecology, and evolution
- experience conducting laboratory and/or field experiments with algae
- laboratory experience demonstrating an attention to detail and commitment to safe work practices
- the demonstrated ability to communicate well in a professional scientific context
- the ability to work across both small and large teams
- commitment to achieving results in a complex social and organizational setting

To apply, please fill out an online application at and upload a single PDF that includes a cover letter, CV, and contact information for three professional references. Applications will be accepted until the position is filled. At this point, this position is not open to foreign nationals who do not have prior work authorization.

Submit your contributions to the next Phycological Newsletter by January 15, 2021

We also welcome your announcements regarding field courses, workshops, meetings, job opportunities, graduate student positions and other algal information throughout the year to add to the PSA webpage:

Please forward this information to

PSA Communications Director

communications@psaalgae.org

PSA accepts donations through Paypal.

Please support the Hoshaw award and other PSA Grants by following this link:

http://www.psaalgae.org/endowment-donations