

PHYCOLOGICAL NEWSLETTER

MESSAGE FROM THE PRESIDENT

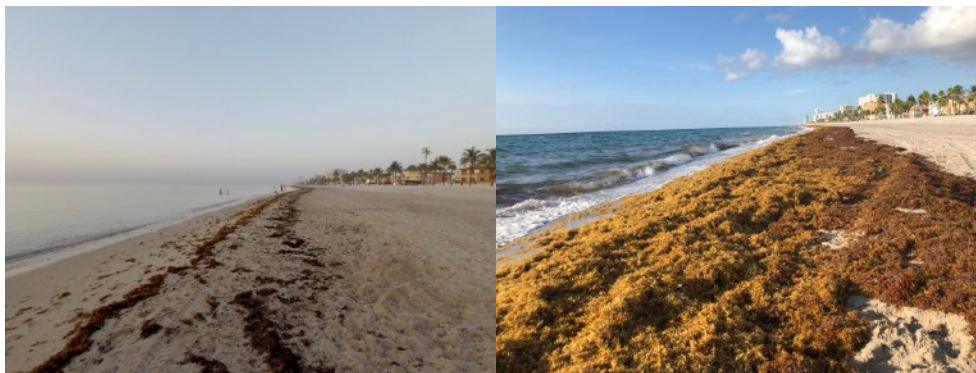


PSA President Kirsten Müller

The 73rd Phycological Society of America annual meeting was held in Fort Lauderdale in late June, set right on the beach with amazing sunrises to greet us each morning. The meeting was well organized and big thanks go out to the local organizing committee: **Dail Laughinghouse, David Berthold, Evelyn Gaiser and Ligia Collado-Vides**, all the student volunteers and our ever-hardworking Program Director, **Amy Carlile**. A special thanks to David, for his outstanding work on making the meeting program look amazing with so many pictures of algae! There were so many amazing talks, conversation and enthusiasm for the phycological research occurring around the world. The focus of talks and posters ranged from harmful algal blooms, to algae, our polar regions, climate change and traditional topics like taxonomy, genomics and ecology. **Ligia Collada-Vides'** talk on massive blooms of *Sargassum* in the Caribbean sticks out to me in particular, primarily because this seaweed was so evident on the beach, but on the last day of the conference we witnessed a

huge amount of this seaweed drift onto the beach just in time for the end of the conference (first picture below is June 26th, second picture is June 28th). In addition, this year was our first student-organized symposium focused on algal physiology and climate change. Thank you to **Arley Muth** and **Sabrina Heiser** for your work on this amazing symposium.

It was my pleasure this year to announce the many awards we have at the PSA banquet. This included the third occasion that we have awarded the Norma J. Lang Fellowship and the honour was



Sargassum accumulation on the beach during the annual PSA meeting. Left, June 26; Right, June 28

Table of Contents

Message from PSA President

pages 1-3

Lang Fellows

page 4-7

Feature: Enchanted Seaweed Forests of Antarctica

page 8-11

Message from the BoT

page 12-13

PSA Membership

pages 14

PSA Awards

page 15-17

Hilda Carter-Lund Algal Photography Contest

page 18

Feature: Microalgae on Postage Stamps

pages 19-22

The Curious World of Seaweed

pages 23

PSA Annual Meeting 2019

pages 24-28

Business Meeting Minutes

pages 29-32

Upcoming Deadlines

pages 33-34

given to Dr. Sophie McCoy, Assistant Professor at Florida State University. Her proposal focusing on the “Direct and Indirect Effects of Climate Change in NE Gulf Mexico Coralline Algal Communities” was selected from a highly competitive pool of applicants. The Provasoli Award, presented annually to the authors of an outstanding paper published in the Journal of Phycology in the previous year, was awarded to Xiaofei Yin, Andreas Ziegler, Klemens Kelm, Ramona Hoffman, Philipp Watermeyer, Patrick Alexa, Clarissa Villinger, Ulrich Rupp, Lothar Schlüter, Thorsten B. H. Reusch, Erika Grieshaber, Paul Walther & Wolfgang W. Schmahl. For their paper on, “**Formation and mosaicity of coccolith segment calcite of the marine algae *Emiliania huxleyi***” (2018, 54:85-104). The Award of Excellence was presented to Professor **Charles Yarish** (University of Connecticut at Stamford), for his outstanding contributions to the field of phycology, including the incredible breadth of his research program and his many significant contributions and broad research topics including seaweed physiology, ecology, biogeography, genetics, seaweed cultivation, and aquaculture.

Planning for our future meetings are currently ongoing. **Next year we will be meeting in Rhode Island**, and the following year we will be going back to Alaska! We continue to be involved in the Consortium of Aquatic Sciences Societies (CASS) and planning for the JASM meeting in Grand Rapids, Michigan in 2022 is ramping up. Through CASS we have also participated in an **Amicus Brief to SCOTUS** from CASS societies and scientists in support of the respondents in County Maui, Hawaii v. Hawaii Wildlife Fund et al. regarding the discharge of pollutants and groundwater.

As noted in a recent email to the PSA listserver, I noted that the Executive Committee will continue to make improvements to our **Code of Conduct**. Again, I want to acknowledge all the comments and the discussion that this document generated. I also want to personally thank those individuals who came forward to speak with me and other members of the EC to discuss issues of diversity and inclusivity within our society. We will continue to advance our values as an inclusive society in which all our members feel safe and supported, as we work together to advance our research in the field of Phycology. We are an inclusive society and are pleased to welcome and represent all members of society from diverse cultures, ethnicities, nationalities, genders and sexual identities and persons with disabilities. We look forward to sharing more of our plans on inclusivity as we move forward.

Table of Contents

In Memoriam
pages 35-45

Meetings and Workshops
page 46-47

New Titles
page 48-49

Employment
page 50

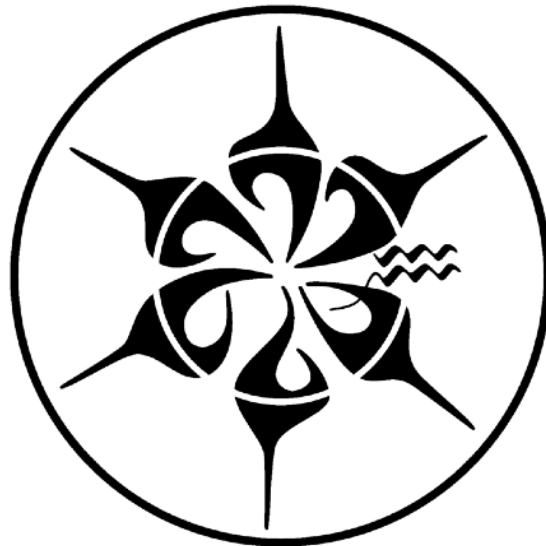
**Follow PSA on
Twitter!**
@PSAAlgae

Lastly, we have two Executive Committee members that will be completing their terms this year. **Alison Sherwood** is completing her role as Past President and was instrumental in bringing forward the Code of Conduct. Our student member, **Arley Muth**, who has done an excellent job, including the student symposium, will be stepping down from her role. The results of the 2019 elections were announced at this year's business meeting. **Eric Linton** will be returning as Vice President/President Elect and **Sabrina Heiser** will be our new student representative. **Joe Zuccarello** (VP International), **Jeff Morris** (Communications Director) and **Maggie Amsler** (Membership Director) were all approved by the membership for second terms.

Finally, I would like to pass on our sincere condolences to Andy Lang (nephew of Norma J. Lang) on the sad passing of his wife Cathy. Our warmest thoughts are with Andy at this time.

There is still work left to do in the last four months of my term as President and I will continue to work on many of the initiatives that I have been involved in. Thank you very much for your support in my role as President and warm wishes for the remainder of 2019!

**With happy algal thoughts,
Kirsten**



PSA NAMES 2019 NORMA J. LANG FELLOW: DR. SOPHIE McCOY



The Phycological Society of America is excited to announce that **Sophie McCoy of Florida State University** is the winner of the 2019 Norma J. Lang Fellowship (\$10,000). Dr. McCoy's proposal "Determining Community-Level Interactions of Cryptic Macroalgae" was selected out of a very competitive pool of 21 applicants. She will be the third Lang Fellow and will serve a three- year term, joining the previous two recipients, Dr. Holly Moeller and Dr. Stacy Krueger-Hadfield. Lang Fellows receive a \$10,000 research grant as well as 3 years of travel support to the annual PSA meeting.

THE NORMA J. LANG FELLOWSHIP

Norma J. Lang was an internationally recognized phycologist who made many contributions to algal research and education over her illustrious career. Lang Fellowships are awarded to carry on her legacy by providing support in the early stages of exceptional algal scientists' careers. The Lang Fellowship was made possible by a very generous donation from Norma J. Lang's estate. The Lang Fellowship and PSA's many other student and postdoc awards are sustained by charitable contributions to the Phycological Society of America Endowment.

Contributions can be made via Paypal:

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

An Interview with Lang Fellow Stacy Krueger-Hadfield

Dr. Stacy Krueger-Hadfield was awarded the second Norma J. Lang Fellowship in 2018. Jeff Morris recently had a chance to talk with her about her science, her experiences as a young researcher, and her plans for her tenure as a Lang Fellow.

JM: Hi Stacy, thanks for talking with me today. To start off, can you tell us a little about your background?

SKH: I grew up in the San Fernando Valley in Southern California, spending time everywhere from the high Sierras to the Pacific tide pools. From an early age, I knew I wanted to be a marine biologist, but was not really sure how to "become a marine biologist." We went to zoos and aquaria all the time and that's what I decided was the way to achieve my dreams. I enrolled at Cal State Northridge, joined a research lab my freshman year, and never looked back.



Post-field work hijinks (photo credit WH Ryan)

JM: What are the big questions that have motivated you as you've come up through the ranks?

SKH: I worked on hydrozoan colony architecture as an undergrad, but taking a phycology course changed my life. I was utterly seduced by seaweeds. I started working on geographic parthenogenesis in a red seaweed and became really interested in the evolutionary maintenance of sex. But, I realized that I couldn't answer these types of mating system questions with field ecology alone. This set me down the path to France and Myriam Valero's population genetics lab. I've been thinking about the evolution of sex ever since!

JM: Would you mind sharing a little insider information about Stacy the person? What do you enjoy doing in your off-time?

SKH: I think I'm kind of boring. Being landlocked in northern Alabama, my marine field sites are quite far from home. Thus, I travel a lot. When I'm not living out of a suitcase, I like to just be at home. I also have a (now not-so-secret) obsession with sneaking away for guilty pleasure happy hour frozen yogurt when I am in Birmingham!

JM: As a successful early-career scientist, what's your philosophy on balancing your professional responsibilities and your personal time?

SKH: I don't always have as good a balance between professional responsibilities and my personal time. It's a pretty challenging transition from post-doc life at the bench to assistant professor life where you have to manage research, teaching, and service duties, with comparatively less training in the latter two roles. This is even more true with funding harder and harder to come by. My research, teaching, and service takes up more than the allotted time in my contract and spills over into my personal time because I can't do anything in half measures. I'd love to have more free time in the evenings or on the weekends. But, if that meant trading travel and being in the field for a proper desk job, no thanks. I get to work with an amazing group of colleagues within the US and abroad. I get to mentor really fantastic early career scientists in my lab. I am constantly trying to balance work and life a bit better, but I doubt I'll ever lose the desire to find out the answer to something and hang around an hour longer in my office or lab.

JM: How has your first year as a Lang Fellow been? Give us your "elevator speech" explaining the work you've been doing.

SKH: I must admit that my Lang Fellow project will begin in earnest this fall. Macroalgae have received collectively less eco-evolutionary attention than other taxa, despite their ecological and economic importance. My Lang project will investigate genome-wide patterns of divergence and genetic diversity at small spatial scales across a gradient of rapid change. We have sampled *Chondrus crispus* populations over the past decade, providing an important temporal component to understanding how algal populations might evolve in response to climate change. Since *C. crispus* is sessile, adaptation might be the only mechanism to insure persistence. To date, no studies have explored the role of genome-wide divergence within the intertidal zone in an alga with a haplodiplontic life cycle, where there are free-living haploid and diploid stages. We know that the intertidal shorescape structures these populations, with core and marginal population dynamics, but subsequent studies are necessary in order to explore local adaptation over this heterogeneous environmental gradient.

JM: Science almost never works the way you expect. What are some setbacks or failures you've had in the last year (or really any time in your career) that stand out to you? How did you cope with them, from a scientific as well as a personal perspective?

SKH: Recently, my collaborators and I have had several large grant applications rejected. For me, these came along one right after the other. It's a lot of time, effort, and a piece of my soul in each grant application. I give myself a few days for anger and then being blue before figuring out a new tack.

JM: How has being a member of PSA impacted your career?

SKH: I've been a member since I was a Masters student. I was awarded a PSA Grant-in-Aid during my PhD that helped fund one of the only studies of paternity in algae. I only managed to attend my first PSA meeting in 2012. That meeting was one of the first meetings I'd attended where the audience was (not surprisingly) really enthusiastic about the complicated life cycles of algae! Attending subsequent meetings has enabled me to initiate new collaborations that have been important to my transition to the tenure-track. Now, as an Associate Editor and a member of the Editorial Board, I've learned new time management skills and met new authors. And, finally, with the Lang Fellowship, I've been able to return to my beloved *Chondrus crispus*. In short, PSA has been fundamental to my career at every stage. I'm grateful for the very generous and collegial society of which I feel fortunate to be part.

JM: Do you have any advice you'd like to give young phycologists?

SKH: Read widely and beyond phycology to set your research into a larger, broader perspective. Attend PSA meetings, it's a great and friendly group of people. And, if you're in the southeastern or northeastern US, attend the more local meetings of SEPC and NEAS if you get a chance!

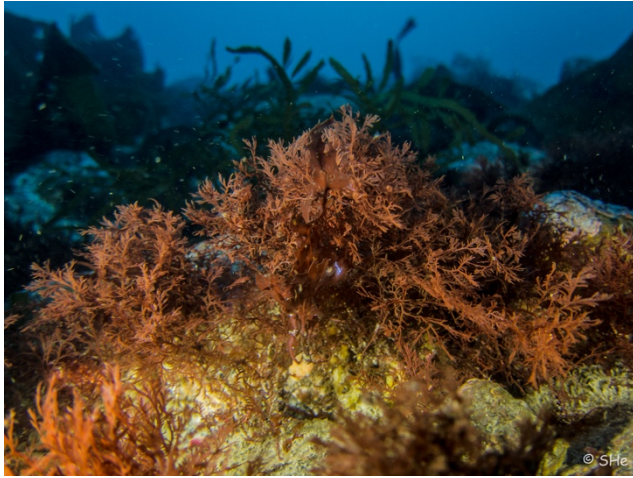


Chondrus crispus gametophyte in a tide pool at the Pointe de Primel in Brittany, France (photo credit SA Krueger-Hadfield)

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

ENCHANTED SEAWEED FORESTS OF ANTARCTICA

by Sabrina Heiser



Plocamium – a finely branched red seaweed, incredibly common along the Western Antarctic Peninsula.

As some of you are following me on twitter (@SabrinaHeiser), you will already have seen my pictures I take above and under water in Antarctica. However, as not everyone uses social media, some of you might have missed out on gaining an insight into the underwater world of Antarctica. Looking through my pictures, I realized that through the years I have become more and more biased towards algae-based imagery and even worse, I do seem to have A LOT of *Plocamium* pictures (my study organism) – but who can really blame me?

But let's start with the slightly bigger stuff, before we get to the charismatic reds.



Several large, perennial, non-acidic species in the Desmarestiales are endemic to Antarctica and cover a significant amount of the sea floor. They can be dense, like in the top left corner, or sparse which allows for reds to be seen. Collecting seaweeds below the dense cover of *Desmarestia anceps* or *D. menziesii* often involves wrangling the long thalli which do seem to develop a life of their own, trying to entangle the diver. So far, I don't know of anyone who has not returned

from those enchanted forests though.



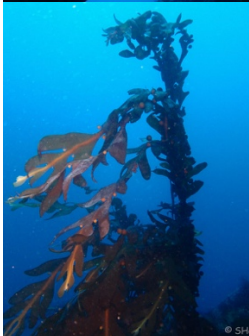
Within those *Desmarestia* forests one can find plentiful flora and fauna (as seen on the left). You probably already noticed the encrusting coralline algae in the last pictures, but they are also commonly found on limpets such as this one here – a common target for coralline collections! But sea urchins can live



under seaweeds too, you can barley make one out underneath the pile of *Desmarestia* in the picture on the right. In the background, you can also see a fleshy encrusting seaweed (as well as our common encrusting one).



On the left you can see *Himantothallus grandifolius*, another big brown canopy-forming member of the Desmarestiales. These can be several divers long and carpet the sea floor, hiding the charismatic reds (but than again, I am biased).



A truly majestic brown seaweed is *Cystosphaera jacquinotii*. It is a member of the Fucales and the only upright standing brown seaweeds as it has little gas-filled bladders. Unfortunately, I do not have a diver for scale, but believe me when I tell you that it is incredible swimming between the upright fronds. This species is often found a little deeper, especially at sites with dense stands, and in

between one can find gems like the sun star which is the size of a dinner plate or bigger.



On the left is *Adenocystis utricularis*, one of the last brown seaweeds that I have a picture of. This one is a little smaller, yet quite fun to look at!

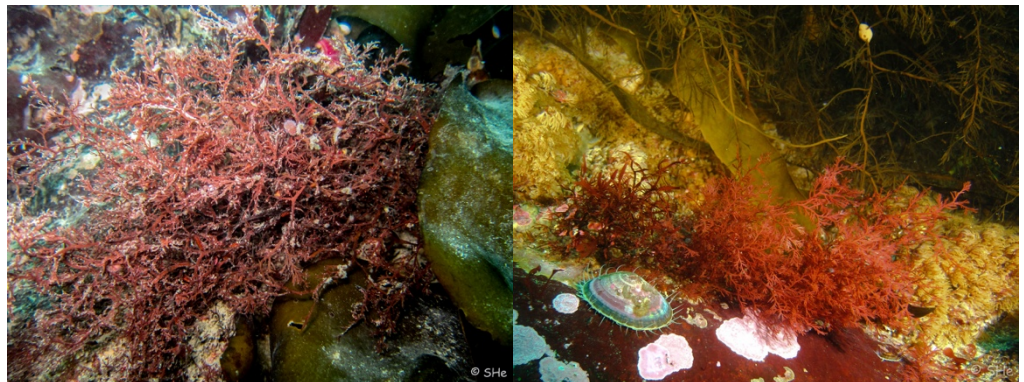
In the pictures below we have one of the few green seaweeds that are found in the subtidal in Antarctica (*Lambia antarctica*) and this one is definitely the more photogenic one! However, as each strand is one long cell, rather tricky to press without making a mess! This species is often found deeper where other seaweeds are not as dense, interspersed with *Plocamium* or (far less charismatic) invertebrates.

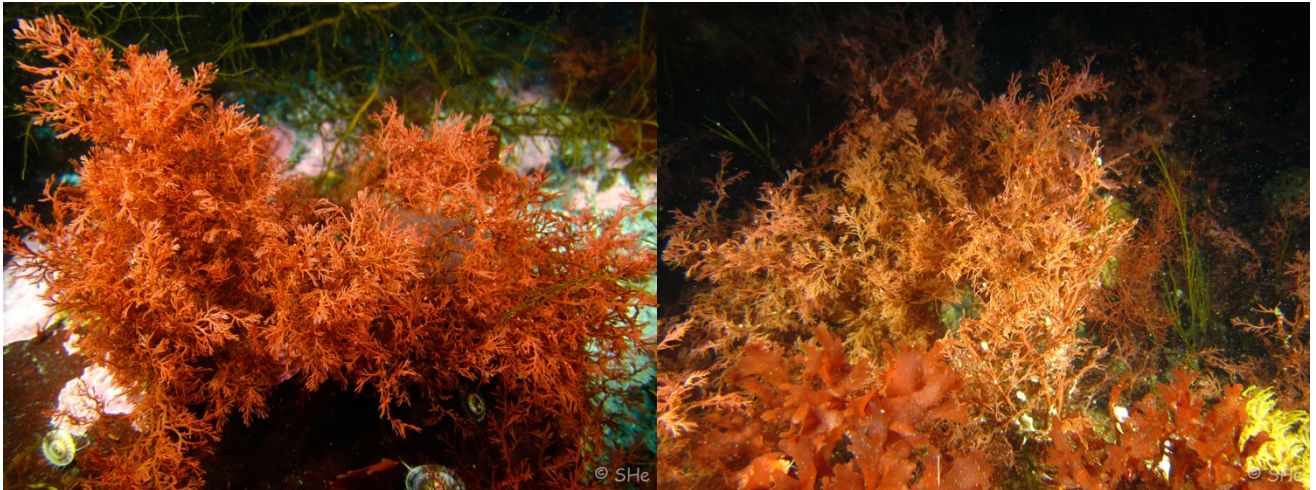


I am a little embarrassed to admit that this might be one of the only pictures I have of a red seaweed that is not *Plocamium*. *Paraglossum salicifolium* does not look quite as pretty as *Paraglossum amsleri* (named after our very own Chuck Amsler), but a little more common than the latter and it beautifully posed against a backdrop of corallines.

And without further ado, last but not least, ladies and gentlemen, I present to you:

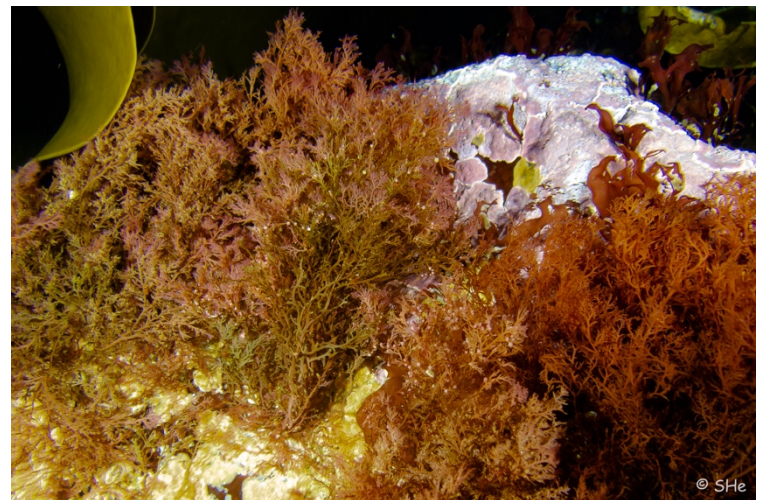
Plocamium "cartilagineum" – I am leaving the species in quotes in order to avoid any potential discussions about the correct name (we do not have a better one yet ...).



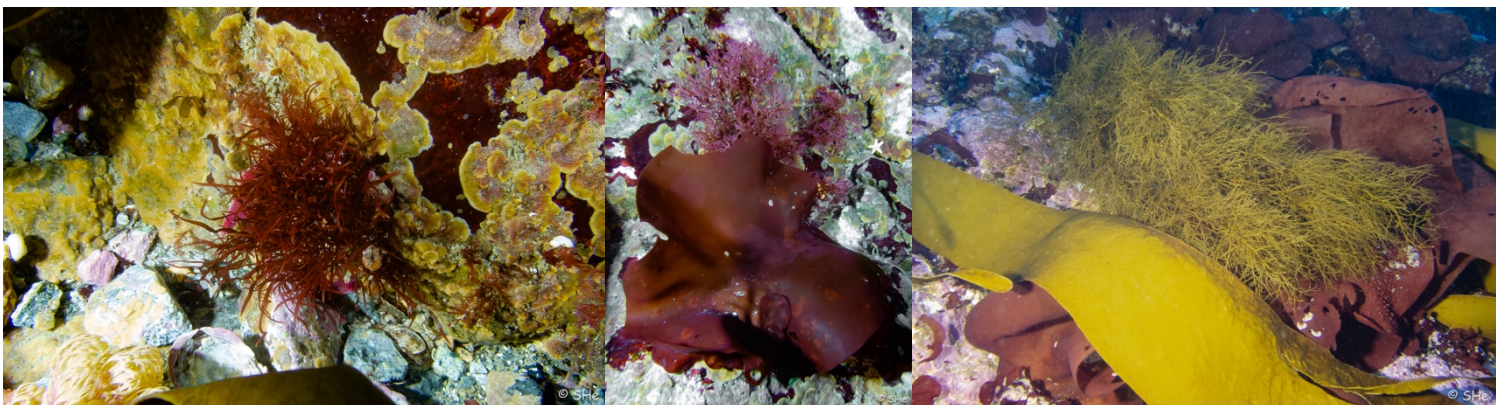


I was particularly excited about taking these *Plocamium* pictures. After having already collected 100s of individuals, it was a special day for me to find an individual with cystocarps (the minute carposporophyte generation growing on and protected by the female gametophyte) when looking through our collections in the lab. The joy was even bigger when I saw one underwater (of course, with no camera to hand). Finally, though, everything lined up: I was in the same spot as a *Plocamium* with cystocarps, underwater, camera on hand! And of many pictures taken, one was in focus (note that in the top right picture, I even included a bladed red).

However, this last season I got an even more exciting picture! In the picture on the right, you can see a vegetative *Plocamium* individual on the right, a cystocarpic individual in the middle and (insert drum roll), a fertile tetrasporophyte on the left!!



Below you can see examples of some other charismatic reds.



News from the PSA Board of Trustees

Hello PSA members,

A quick update from the Board of Trustees. As is the custom, we met just before the annual meeting in Fort Lauderdale this June. What a great week!

- **PSA Endowment** – The endowment remains in good fiscal health and totaled a little more than \$3 Million U.S. dollars at the end of the second quarter for 2019. This year, we are projected to earn more than our planned expenditures for our 2020 award programs. Therefore, the BOT discussed numerous options and recommended to the EC that we increase the support for Hoshaw Travel awards by \$6,000 for next year (and beyond) for a total of \$18,000. The BOT recognizes that student attendees and their presentation of their research not only enrich the PSA Annual Meeting in the present year, but also students' involvement is key to the long-term success of the society. In addition, the BOT approved an increase of \$3,000 in the annual funding for Norma J. Lang Early Career Fellows. These funds will provide up to \$1,000 in reimbursed travel costs for each of our Lang Fellows to attend the PSA Annual Meeting. We continue to work to build the principal in our Hoshaw Student Travel Award Endowment line to avoid the need to transfer funds from other sources to our yearly award commitment.
- **AlgaeBase** – The PSA leadership continues to work with Mike Guiry to strategize about future plans for sustaining this critical resource for the algal community. To that end, we had a very productive face-to-face meeting in conjunction with the annual meeting. An important component of our planning is to continue to collaborate with other Phycological & Protist Societies that also value AlgaeBase and facilitate the whole community supporting this resource. We are also examining potential 'experts' models that could be put into place in the future when the Guirys retire from active involvement in AlgaeBase.
- **Legacy Society/Planned Giving** – BOT member Michelle Wood along with Rick McCourt are working to make giving to PSA easier and more visible

including changes to our website along with other initiatives. More will be coming on these efforts next year.

- At the annual meeting, we once again had **a live auction** (my first) and took donations for reprints/books that were not part of the auction. I want to thank Julie Koester for collecting all the proceeds and the UF students for showcasing the auction items so elegantly/professionally (Vanna White would have been jealous). And of course, thank you to those that donated items and purchased them. We took in over \$2600 for the endowment. Looking forward to the auction in RI next June. Hope everyone has the meeting on their calendar – June 14-18, 2020.
- And, looking towards next year’s meeting we will again have **PSA swag** including stickers, pins and magnets for sale. We will definitely have a larger version of our rainbow logo in sticker form. I would be grateful to get help in determining/designing the swag. Please let me know if you are interested in helping out.
- Please feel free to email me about any questions/concerns you might have – vis-chia@ohio.edu.

Cheers,
Morgan Vis
Chair, BOT



The PSA Rainbow Sticker design

PSA Membership

Greetings from the Membership Director:

Membership renewals for 2020 will be arriving soon via the Society's publishing partner Wiley. You will be pleased to note there is no increase in dues! I ask all members to renew early and in doing so help reduce the costs of the Society's renewal campaign. Please do not hesitate to contact me if you have any questions or concerns with your renewal.

As a reminder, current student members receive a total of three years membership for the cost of one as long as you remain a student. You may not receive a renewal letter unless this is your third year. If you are still a student - no problem, renew for another three years at the same rate. Encourage your fellow psychological students to join and take advantage of this great deal and all the perks of membership.

One change for 2020 is that our Teacher/Pupil category has been combined with the Student category. Secondary school teachers and their pupils now enjoy the same benefits as Students, including three years of membership for the price of one.

As always, anyone can gift or sponsor a membership in any category for a lucky psychophile. Contact your friendly MD for assistance!

Hoping to see you at next year's annual meeting in Rhode Island and/or perhaps at a regional conference.

All the best with your psychological endeavors,

Maggie Amsler

THE 2019 PSA AWARD OF EXCELLENCE

This year's PSA Award for Excellence goes to Dr. Charles Yarish from the University of Connecticut at Stamford. Dr. Yarish's early research in the 1970s and 1980s focused on seaweed cultivation and the use of cultures and field studies to assess seaweed growth and reproduction under different sets of environmental conditions in relation to their biogeography. His initial studies focused mostly on rhodophytes but Dr. Yarish soon began looking at large brown kelp species growing around Long Island Sound, an urban body of water strongly affected by anthropogenic nutrient inputs from densely populated metropolitan New York City. In the 1980s, he began exploring the potential for kelps to be grown in Long Island Sound and southern New England for aquaculture purposes and nutrient bioremediation, which initiated a strong interest in aquaculture growth of seaweeds for ecological and economic purposes. He quickly became engaged in projects examining seaweed aquaculture with colleagues in China, Korea, Japan, Chile, and other parts of the world as well as in New England. By the 2000s, Dr. Yarish had gained the reputation of being the go-to person when it came to investigating seaweed aquaculture from "seed to market". His research has strengthened the evidence for the ecological advantages of adding nutrient-scrubbing, economically valuable seaweeds to multi-trophic aquaculture systems and changed thinking about how to implement sustainable aquaculture.

Besides his broad and deep research program, Dr. Yarish also has been an excellent teacher and mentor to undergraduate, graduate, and postdoctoral students as well as to early-career international scholars. He has been recognized by his university for his excellence on several occasions, including an award for outstanding achievement in teaching, research, and services. He has supported and mentored numerous postdoctoral students in his laboratory and has served as a dissertation adviser for several international students. Dr. Yarish has been a mainstay of his Department and a role model for others at the Stamford campus and at The University of Connecticut based on his research productivity and his excellence as a teacher and mentor. Dr. Yarish has also consistently been an active participant and leader in the phycological community through his work in support of phycological societies, including the PSA. He has a history of regular attendance at PSA meetings, was appointed a PSA National Lecturer, and served as the Society's Secretary, President and member of its Executive Committee.



Dr. Charles Yarish with PSA President Kirsten Müller at the 2019 annual meeting in Fort Lauderdale

BOLD AND LEWIN AWARDS

The prestigious student award competitions at the PSA meeting included high caliber oral presentations and innovative poster presentations covering topics ranging from salt tolerance in *Chara* to Arctic crustose coralline algae. Congratulations to all of the student participants for their efforts to present their research in a clear, compelling, and engaging manner.

Four students competed in the Lewin Award for the best poster presentation. **Karli Hollister** received the award for her poster, “**Coral-algal competition and overgrowth dynamics of a rapidly emerging red alga (*Ramicrusta* sp.) in St. Thomas, US Virgin Islands**”. Ms. Hollister is a Master’s student at the University of the Virgin Islands, and was recommended by her advisor, Dr. Tyler Smith. Lewin Award recipients receive \$500. The Lewin Award competition is an excellent venue for beginning graduate and advanced undergraduate research poster presentations – encourage your students to participate!

The 46th annual Bold Award for outstanding oral presentation included 11 graduate student participants. Ms. **Hannah Reich**, a doctoral candidate from the Department of Biology at Pennsylvania State University, prevailed with her presentation “**Iron availability dictates the response of coral symbionts to thermal stress**”. Her advisor, Dr. Todd C. LaJeunesse, commented that “..her (Hannah’s) investigations into the role of iron concentrations on the physiology of coral symbionts are furthering our fundamental understanding of the importance of trace metals on the physiological limitations of thermally tolerant and thermally sensitive symbiotic dinoflagellates (*Symbiodiniaceae*).” Bold Award recipients receive \$1000, and special consideration for an article published in the *Journal of Phycology*.

Many thanks to the six student award judges and to plenary speaker Clarissa Anderson for their invaluable time and intense consideration in judging the student award competitions. If you are interested in participating in the student awards committee and enjoy contributing towards our upcoming generation of phycologists, then please contact Heather Spalding (spaldinghl@cofc.edu). As an added bonus, student award judges receive free drink tickets at the banquet.



Left to right, PSA President Kirsten Müller, Bold Award Recipient Hannah Reich, Lewin Award Recipient Karli Hollister, and Student Awards Committee Chair Heather Spalding.

TIFFANY AWARD



Left to right, PSA President Kirsten Müller, Tiffany awardee Jillian Freese, and PSA Algae and Human Affairs Committee Chair Schonna Manning

The L. H. Tiffany Award was established in 2015 to honor L. H. Tiffany, the third president of the Phycological Society of America (1948-1949) and charter member of the Society whose book “The Grass of Many Waters” informed many about the world of algae and their importance. The 2019 Tiffany Award was given to **Jillian Freese** for her delightful children’s book ***A is for Algae***.

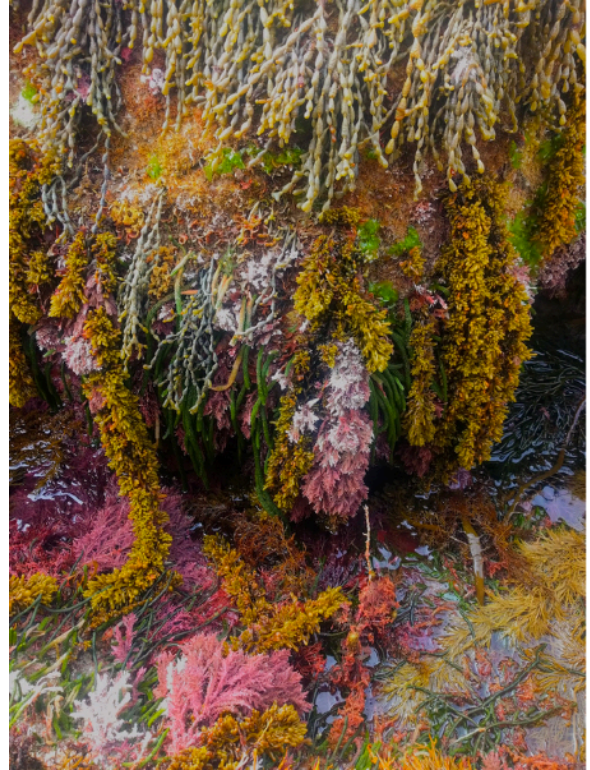
PROVASOLI AWARD

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 2019 Provasoli Award was given to **Xiaofei Yin, Andreas Ziegler, Klemens Kelm, Ramona Hoffman, Philipp Watermeyer, Patrick Alexa, Clarissa Villinger, Ulrich Rupp, Lothar Schlüter, Thorsten B. H. Reusch, Erika Griesshaber, Paul Walther and Wolfgang W. Schmahl** for their paper “**Formation and mosaicity of coccolith segment calcite of the marine alga *Emiliana huxleyi***”.

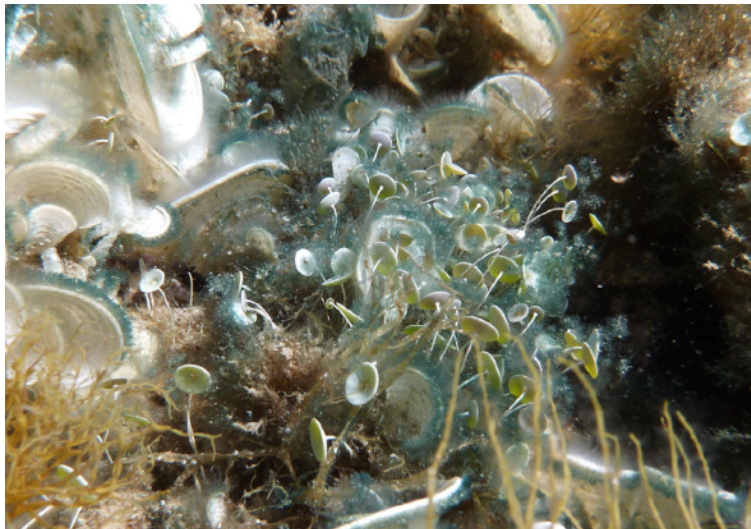
The Hilda Canter-Lund algal photography competition

I'm pleased to announce that the winners of the 2019 Hilda Canter-Lund competition for the best algal-themed photograph are **Zoe Loffler**, for her image "Symphony of Seaweeds" and **Damien Sirjacobs** for his image "Blue Haze". You can see both images, and all the other images that were selected for the shortlist at <https://brphycsoc.org/canter-lund-2019/>.

Congratulations to all those whose images were selected for the shortlist but, particularly, to the two winners. Thank you, too, to all the other photographers who submitted images. We'll be back next year for another competition so do keep looking out for distinctive images of algae – large or small – that could make it to the shortlist next year.



Symphony of Seaweeds by Zoe Loffler



Blue Haze by Damien Sirjacobs

Images from the Hilda Canter-Lund archives have been shown in a number of exhibitions around the world and the British Phycological Society welcomes enquiries about future opportunities where these great pictures can be used to raise the profile of algae

Martyn Kelly

Micro-algae On Postage Stamps

Michael J. Wynne, Department of Ecology as Evolutionary Biology and Herbarium,
University of Michigan, Ann Arbor, Michigan 48109, U.S.A.

and

Mark B. Edlund, St. Croix Watershed Research Station, Science Museum of Minnesota,
Marine on St. Croix, Minnesota 55047, U.S.A.

A coverage of “Macro-algae on postage stamps” appeared in the previous issue of the Phycological Newsletter (Wynne, 2019). The present treatment supplements that coverage with the focus on micro-algae, thus diatoms, dinoflagellates, cyanobacteria, and freshwater greens. Postage stamps, both individual stamps and sometimes sets, have often featured food chains, especially in Antarctic waters. In fact, the first stamp featuring micro-algae illustrated the Antarctic food chain in a set of 12 stamps issued by South Georgia in 1963, with the diatom taxa included and recognizable, even if fairly small. That stamp was re-issued in 1971. Most reference numbers are from the ‘2018 Scott Postage Stamp Catalogue’ (2017, Scott Publishing Co., Sidney, OH) or from the country of origin.

Plate 1:

British Antarctic Territory, 1984. Series of 16 stamps. 1P with *Corethron criophilum*. Scott 102. 3 Pound stamp with marine food chain shows Antarctic diatoms. Scott 116.

British Antarctic Territory, 2014. Marine Food Web. Set of 9 stamps showing the Antarctic food web. All 65p denomination. “Phytoplankton” shows many marine diatoms. Scott 485.

Canada, 1990. Set of 4 stamps, on pre-historic life in Canada. This stamp depicts a columnar stromatolite, uncovered in western Quebec, which was formed 1900 million years ago. 39 cents. Scott 1281.

Finland, 2002. Marine life. Set of 5 stamps. Scott 1177.

French Southern and Antarctic Territories, 1985. Biomass. Outline of whale with *Chaetoceros*. Scott 112, 113.

French Southern and Antarctic Territories, 2002. Shows three pack ice diatom species. Scott 309.

Germany, Federal Republic, 2015. Set of 2 stamps on microscopic world. Diatom stamp shows SEM image of a marine *Petronopsis*. Scott 3192-3193.

Greenland, 2007. Science, set of 3 stamps. 10.25.

Monaco, 1997. Set of 2 stamps to honor RAMOGE marine reserve program. Showing images of *Cyclotella* and *Triceratium* under the scope.

Poland, 1987. Antarctic Research. Among the planktonic organisms eaten by *Euphasia superba* are three diatom species *Corethron criophilum* and two *Chaetoceros* spp. Scott 2782.

Tonga, Niufo’ou, 1997. The Ocean Environment. Set of 4 stamps, showing many marine planktonic diatoms. Scott 262-265.

Plate 2:

Australian Antarctic Territory, 1973. Food chain. Plankton and krill shrimp. Scott L23.

Australian Antarctic Territory, 2001. Antarctic Base Station. Set of 4 stamps. Scott 119. Silicoflagellate. Scott 119b.

British Antarctic Territory, 2001. Set of 4 stamps. Antarctic life, showing at least two diatom species (*Corethron* and *Hemiaulus*?) among phytoplankton and krill. Scott 315 a-d.

British Antarctic Territory, 2014. Marine Food Web. Phytoplankton, with many marine diatoms. Scott 485.

French Southern and Antarctic Lands, 2016. Antarctic diatoms, with enhanced SEM images including marine and freshwater forms, *Aulacoseira*, *Humidophila*, *Brachysira*, *Diploneis*.

Isle of Man, 1992. Centenary of the Port Erin Marine Laboratory 1892-1992. Set of 5 stamps, Scott 509-513. Phytoplankton. Scott 510.

Macedonia, 2010. Set of 4 stamps showing unique organisms in Macedonia's Lake Ohrid. Diatom stamp shows image of *Surirella spiralis*. Other stamp shows the endemic *Chara ohridiana*. Scott 561-564.

Monaco, 1991. Phytoplankton, set of stamps to honor Musée Océanographique. Live image of 23 pence; *Chaetoceros*, *Hemiaulus*, *Thalassionema*. Scott 1757.

Monaco, 1992. Phytoplankton. *Ceratium ranipes*; *Ceratium hexacanthum*. Monaco Musée Oceanographique. Scott 1832, 1833.

Portugal, 1997-1998. Set of 12 stamps of marine plankton. Diatom stamp shows "*Tabellaria* sp." but is more likely a marine *Thalassionema*. Scott 2215-2218.

South Georgia (Falklands), 1963 and 1971. Part of 16 stamp set on marine life. 1963. Plankton & krill. Bottom center shows several micro-organisms, possibly *Sheshukovia* and *Triceratium*. Scott 14. Re-issued in 1971 with 50 pence overprint. Scott 30.

Sweden, 1979. Marine research (Set of 3 stamps). Bluegreen algal growth in Baltic Sea. No. 1301.

Wallis & Fortuna, 1981. Marine life. Set of 6 stamps. Scott 264-269. Cyanophyceae, Scott 265; *Ceratium vultur*. Scott 266.

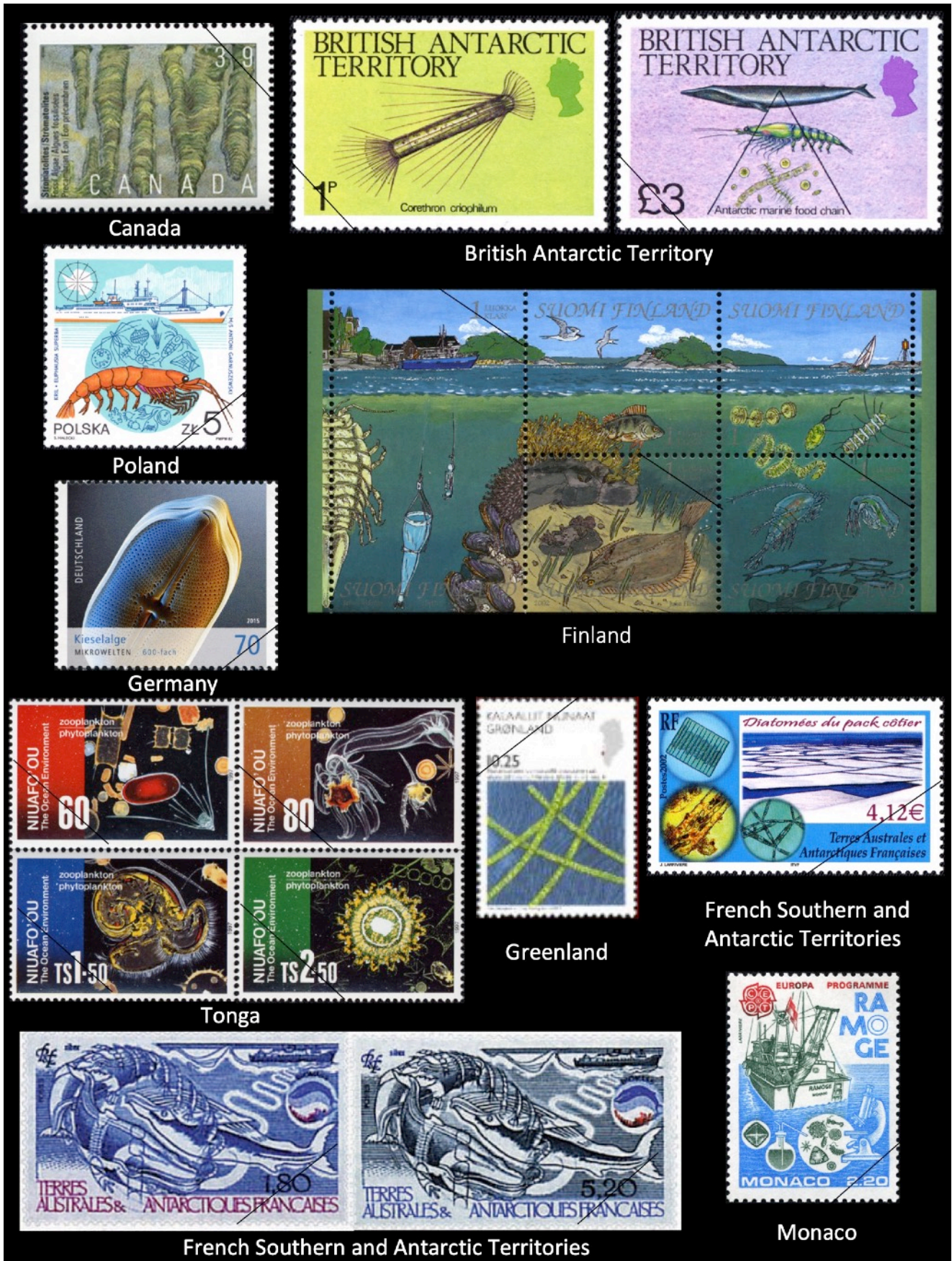


PLATE I.

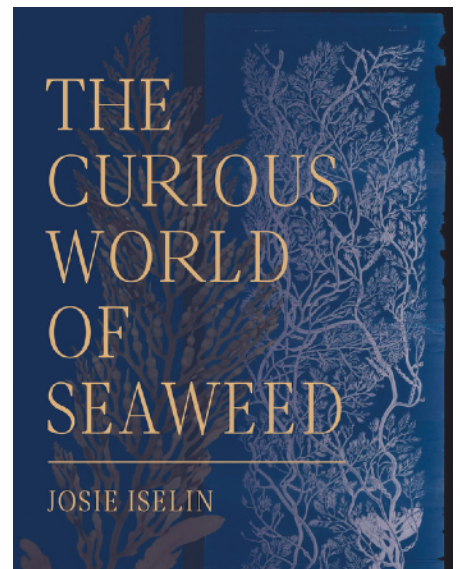


The Curious World of Seaweed

by Josie Iselin

Marine 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 follow-up to her Tiffany Award-winning 2017 book *An Ocean Garden*, 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, its 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.

This beautiful volume is ideal for both seaweed lovers and phycology students. More information is available at <https://heydaybooks.com/book/the-curious-world-of-seaweed/>.



THE PSA 2019 ANNUAL MEETING

The 2019 meeting of the Psychological Society of America was held from June 23 to 27 at the Hollywood Beach Marriott in Fort Lauderdale, Florida. Plenary speakers included Susan R. Eaton, Catriona Hurd, and Clarissa Anderson. Attendees participated in numerous fascinating scientific symposia, and in particular the first-ever student-organized symposium, “What goes on, on the inside? Connecting algal physiology, their distribution, and climate change”, was a big success. Thanks to local organizer **Dail Laughinghouse** and PSA program director **Amy Carlile** for putting together another excellent meeting for our society!



The Hollywood Beach Marriott



Believe it or not, we managed to come in from the beach long enough to see a few talks... Photo credit David Berthold



Left to right: local organizer **Dail Laughinghouse**, PSA secretary **Patrick Martone**, PSA president **Kirsten Müller**, and PSA program director **Amy Carlile**. Photo credit Mike Wynne.



Photo credits David Berthold



The field trip to the Everglades was a blast! Photo credit Amy Carlile



Past and current presidents of PSA. Back, left to right: Charles Yarish, Dennis Hanisak, Charles Amsler, Steve Murray, Alison Sherwood, Larry Liddle. Front, left to right: Mike Wynne, Michelle Wood, Paul Gabrielson, Morgan Vis, Kirsten Müller, and Rick McCourt. Photo credit: Mike Wynne



Photo credits, Mike Wynne



Photo credits, Mike Wynne



**Phycological Society of America
Annual Business Meeting of the General Membership
Ft. Lauderdale, Florida
25 June 2019**

MINUTES

PSA President Kirsten Müller called the meeting to order at 5 PM.
Approximately 60 people in attendance.

Minutes from the 2018 Annual Business Meeting (Vancouver, BC) were approved.

Treasurer's Report – Julie Koester

- First a brief overview. We have secured a new CPA in Wilmington, NC specializing in non-profit organizations. We have paid our dues to the American Institute of Biological Sciences and the Natural Science Collections Alliance. We have paid to maintain our liability insurance.
- We have continued our commitment to financially support AlgaeBase, recognizing it's value to our community
- The Journal of Phycology and our annual meetings generate most of our society income, but meetings are also our largest expense. There are ongoing conversations with the executive committee to improve our budgeting for meetings. The treasury currently has \$191,134. Our 2019 income so far is \$146,428 and total expenses are \$67,313, but we haven't paid for the meeting in full and there are other expenses mounting.
- Net income generally outpaces expenses. In 2015, we were given a huge boost by the generous donation from the Norma Lang. But in 2017 and 2018 we dipped below 0, meaning we spent more than we brought in.
 - In 2017, Gross income (\$325,538) and Expenses (\$355,171) meant that net income was - \$29,633.
 - In 2018, Gross income (\$346,386) and Expenses (\$394,067) meant that net income was - \$47,681.
- Motion to accept the treasury report was passed unanimously.

Endowment Report – Steve Murray

- The treasury reserve has \$145K, with \$50K going to AlgaeBase and an additional \$95K in reserve.
- The PSA Endowment has \$2.945 million dollars, and total value assets of \$3.091 million dollars. We cap the reserve funds so that when it exceeds some maximum, we can move funds to other line items. Because of the strong endowment growth, we have been able to increase expenditures year after year. In 2017, we spent \$59K, in 2018 we spent \$70K, and in 2019 we will spend \$74.5K.
- In 2018, we earned \$82K, but our expenditures are only \$74.5K. Hence, we have a \$7,587. This money will be distributed as follows:
 - Increase Hoshaw Award to \$12K
 - Increase Prescott Award to \$1000
 - Increase publication expenditure to \$1500
 - Seed the Legacy fund with \$1000
- The following expenditures have been approved for 2020. We are committed to increasing student support. We will increase the Hoshaw Award to \$18K to fund more students at perhaps a higher dollar amount. We are adding \$3K per year for all Lang Fellows to travel to the annual meeting (that is, \$1K per year for each year of the Lang Fellowship).
- Endowment earnings are projected to increase by 2.88% in 2019.
- Our goals are to continue to build principals for all expenditures so that they will be essentially perpetually funded. The General fund still needs \$108K and the Hoshaw still needs \$312K.
- Motion to accept the Endowment report was passed unanimously.

Board of Trustees Report – Morgan Vis

- The BOT takes the long view on where we want the society to go and how we want to progress into the future.
- The BOT has had a lively discussion on how best to use endowment funds, and we all agreed that we need to invest in students, networking, new science, and young researchers. We identified the Hoshaw Award as very important in this regard.
- We are working on making a plan to digitize and preserve the PSA archives and to get them online. You will hear more about this in years to come.
- We have made a small investment in the Legacy Society to make it easier to leave money to PSA.
- AlgaeBase is a very important resource. We have been working with Mike Guiry to ensure that AlgaeBase will endure in the future. We have had a meeting here in Florida to chat about financing and working with other phycological societies to make it easier for them to contribute to AlgaeBase. This committee will create a white paper so that other industries and donors can contribute as well.
- Paul Gabrielson thanked Morgan for her leadership, saying that we are a small society with a huge endowment and that we should be very proud.

Membership Report – Maggie Amsler

- A reminder to our membership that Maggie is our liason between the society and Wiley publishing. If there are any problems with renewing memberships, including online issues, contact Maggie directly, NOT Wiley. There have been some ongoing problems.
- There are currently 624 PSA members, including 210 students and 414 non-students.

- Dues will remain steady in 2020. Student memberships remain a great value: \$40 online (\$55 print) for 3 years, and includes all the great perks of membership.

Program Director Report – Amy Carlile

- Thank you to the local organizers and committee for making this Ft. Lauderdale meeting a huge success. We have counted 160-170 registrants. Extra special thanks to Dail Laughinghouse who helped bring this all together.
- Next year's meeting will be in Providence, Rhode Island, June 14-18, 2020, with local organizer Chris Lane.
 - Many easy airport options: Providence, Boston, or New York
 - Meeting will take place in the iconic Biltmore Hotel, now called The Graduate. Large hotel rooms at a good value. \$175 per night for suites that will sleep 4 people, including living area plus 2 king sized beds.
 - Symposium ideas for the 2020 meeting are coming together. Chris Lane is thinking about "Putting a face to a sequence, reconciling environmental diversity with species descriptions." Dale Casamatta is thinking about "Algae in space."
 - There will be field trips to the rocky intertidal zone near Jamestown, salt ponds, and Lincoln Woods State Park.
- 2021 meeting likely to be in Juneau, Alaska with Mike Stekoll as a local organizer.
- 2022 meeting will be the Joint Aquatics Sciences Meeting (JASM) with the Consortium of Aquatic Scientific Societies, 18-22 June 2022
- 2023 meeting will be joint with the Botanical Society of America. Details TBA.
- Reminder to all that the next International Seaweed Symposium will be in Hobart, Tasmania, 13-18 February 2022.

Editorial Report – Mike Graham

- Three jobs of the managing editors are to (1) keep the journal topical and relevant, (2) keep it attractive to members, and (3) keep it profitable. We are doing well on all fronts.
- Our impact factor hit 3.0 last year so we had a bump in submissions. But our acceptance and rejection rates have been constant – we haven't lowered the bar, and this is important. The time to reject has gone down, which is great. Time to publication is the fastest ever. Our impact factor has dropped slightly to 2.83, but this is within the range of the last 3 years (2.8-3.0).
- The front matter of the journal is important. Mini-reviews, highlights, letters, and all are usually highlighted on the journal cover. We want hot ideas to come to our journal and not go elsewhere. So consider your submissions!
- In January 2020, there will be a totally new editorial office. Interested parties can contact Mike to put their names in the hat.
- Every two years, we will highlight the best student paper published in the journal. 2020 will be the first year of the award, so looking back over 2018-2019.
- The Provasoli award continues to be the most prestigious award for papers published in the journal. Winners receive a plaque and \$1K. In 2018, we had 24 nominations, but the paper that rose to the top to win was:
 - Formation and mosaicity of coccolith segment calcite of the marine algae *Emiliania huxleyi*

- Authors: Xiaofei Yin, Andreas Ziegler, Klemens Kelm, Ramona Hoffman, Philipp Watermeyer, Patrick Alexa, Clarissa Villinger, Ulrich Rupp, Lothar Schlüter, Thorsten B. H. Reusch, Erika Griesshaber, Paul Walther & Wolfgang W. Schmahl
- Said one nominee: “This is a really nicely done and unique study on biomineralization in the extremely abundant and ecologically important *E. huxleyi*. I was impressed with the quality of the micrographs and the variety of techniques employed to tackle the problem.”

Communications Director Report-- Jeff Morris

- Our PSA Twitter feed has been very active. Impact Factor is just one thing, but we need to increase our Altmetric scores by talking about papers and presentations on Twitter. So be active! @PSAalgae
- There have been issues keeping the communications committee and webpage updated and useful. Now we have a calendar of committee chairs and tasks and timelines. Committee chairs can look at the schedule and the webpage and tell the communication director what to update. I can send the calendar of requests to anyone who is interested.

President's Report – Kirsten Müller

- Election results. Thanks to all nominees!
 - New Editorial board members: Dail Laughinghouse, Schonna Manning, Chicako Nagasato, Annick Wilmotte, Heather Spalding
 - Membership Director: Maggie Amsler, another 3 years
 - Communications Director: Jeff Morris, another 3 years
 - International Vice President: Joe Zuccarello, another 3 years
 - Student representative: Sabrina Heiser
 - Vice President / President Elect: Eric Linton
- Thanks to volunteers for various committee work. Please stay involved, everyone. Vacancies often come up. Please contact Kirsten with any volunteer ideas or with interest.
- Bylaw edit. Past practice has been to have a minimum of 4 people nominated for each position, but Jim Wee has struggled to find 4 people to get on ballot. We propose to change the Bylaw to state a minimum of 2 people, instead of 4 people. So that just 2 nominees are required for any elected office.
- Thanks to Sophie McCoy and the rest of the Hoshaw Award Committee. Kirsten Müller and Morgan Vis handed out 19 Hoshaw Awards with applause from the audience.

Meeting adjourned at 6:05 PM

**Respectfully submitted by
Patrick Martone, Secretary**

Upcoming PSA Awards & Grants

PSA Award of Excellence

The Psychological Society of America is soliciting nominations for one or more Awards of Excellence. Recipients of the 2020 Award of Excellence will be chosen on the basis of their sustained scholarly contributions in, and impact on, the field of psychology, 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 psychological societies. The Award is a career achievement award for a living psychologist. Membership in the PSA is not a requirement for nomination. See previous awardees at <http://www.psaalgae.org/award-of-excellence/>.

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 the previous year (2019) for nominees who were not selected in 2019 will automatically be reconsidered in 2020. Updates to nomination packages submitted in 2019 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 2019 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 psychological 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 2020 annual meeting of the PSA, the complete nomination package must be received by January 31, 2020.

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.

Nomination package due:

January 31, 2020

PSA Research Grants

The Psychological Society of America (PSA) supports the activities of its student and postdoctoral members through three programs administered by the Grants and Fellowships Committee of the PSA. The **Grants-in-aid-of-research** program (GIAR) provides small grants to support research that would not otherwise be

possible for the applicant. The **Hannah T. Croasdale Fellowship** enables graduate students to broaden their psychological training by funding costs associated with attending psychological courses at biological field stations. Finally, the **Hoshaw Travel Awards** help students cover the costs of attending the annual PSA meeting.

FUTURE DEADLINES: The deadline to apply for the GIAR program is Wednesday 1 November 2019. The deadline to apply for the next Hannah T. Croasdale Fellowship competition is Thursday 1 March 2020. The deadline to apply for a Hoshaw Travel award to attend the 2019 annual PSA meeting (in Fort Lauderdale, Florida) is Monday 2 April 2020.

MORE INFORMATION: <http://www.psaalgae.org/grants-and-fellowships/> or contact Sophie McCoy (email - mccoy@bio.fsu.edu)

Deadlines:

GIAR: November 1, 2019

Croasdale: March 1, 2020

Hoshaw: April 2, 2020

PSA accepts donations through Paypal.

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

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

In Memoriam

C. DAVID McINTIRE (1932-2019)

Ecologist and diatomist Charles David (Dave) McIntire passed away peacefully on January 4, 2019, from complications from leukemia. He was 86 years old.

Dave's life trajectory was anything but typical for an academic, ecologist, and phycologist. He was born in St. Louis, Missouri, in 1932, but

his life's passions went far beyond diatoms and systems ecology. When he was in sixth grade, he took up the alto saxophone and began his lifelong love of jazz music. In high school, Dave joined the musician's union and a local professional band, after which he attended Southern Methodist University, receiving a degree in Business Administration, which he jokingly said later was mostly "monkey business." Dave was a member of the SMU Mustang Band and in the summers began to play with a band at Yellowstone Park, developing a lifelong love affair with Yellowstone. After graduating SMU, Dave volunteered for the draft and eventually was assigned to a radar platoon and stationed with the 7th Army in Karlsruhe, Germany. His military life changed when he joined the 7th Army Jazz Band; Dave's army stories were definitely not for the faint of heart.

After Dave was discharged, he moved to Corvallis to pursue a degree in Fisheries at Oregon State University. He continued on with a MS degree that involved management of fish ponds at OSU. During this time, he consulted with Dr. Harry Phinney, who helped him identify the pond algae. This was the beginning of Dave's long relationship with Harry, who had a large impact on Dave's life and career. A short time after finishing his master's degree, Dave was informed by Harry that Dr. Charles (Chuck) Warren had just received a grant from the National Science Foundation to set up laboratory streams, and that the project needed Ph.D. students. Dave became Dr. Phinney's student and was allowed to design his own specific experiments that were compatible with the overall objective of the project. The result was Dave's pioneering research on how benthic stream metabolism was affected by environmental variables such as light, current, and temperature. It was during this period that Dave met his wife Carol, who worked at OSU.

After completing his Ph.D., Dave accepted a faculty position in the Department of Botany and Plant Pathology at OSU. He quickly developed his own research program and in 1967 obtained an NSF grant to investigate the distribution and abundance of the diatom flora in estuaries along the Oregon coast, which involved both marine mesocosms and field work. During this time, Dave developed a professional relationship with Drs. Ruth



Patrick and Charles Reimer at the Academy of Natural Science in Philadelphia in order to better learn diatom taxonomy. Rumor had it that Dr. Patrick tried to hire Dave during one of his summer visits, but he did not want to leave Oregon for the “urban jungle of Philadelphia”.

In 1970, Dave received a NSF Science Faculty Fellowship to spend a one-year sabbatical at the Center for Quantitative Science at the University of Washington. Here he audited courses on quantitative analysis, which ultimately led him to be one of the first ecologists to examine patterns in diatom communities using multivariate ordination techniques. Also during his sabbatical, Dave used General Systems Theory to synthesize the results of his laboratory stream experiments into a mathematical model of periphyton dynamics in lotic systems. Funding from OSU's involvement in the International Biological Program allowed him to eventually expand this into a larger model of the total stream ecosystem. The model explains fundamental dynamic inter-relationships and dependencies among processes that occur in lotic ecosystems. His publications in Ecological Monographs in the 1970s complemented research on nutrient spiraling, a concept that still permeates the field.

In the mid-1970's, Dave research interests and funding returned to the sea, where he examined diatom communities in Oregon estuaries. Students working on his coastal surveys were amazed and intimidated to watch him demonstrate the use of water skis to move across the soupy mudflats to take diatom samples. His stories of falling face first into the intertidal mud always resulted in howls of laughter, with the loudest laughs coming from Dave himself. In the 1980's and 1990's Dave was involved in new laboratory stream work by the OSU “Stream Team”. These experiments were particularly focused on herbivory, and he used some of those data to further develop that aspect of his stream process model. Also during this period, Dave became involved a 10-year study of Crater Lake funded by the Park Service to provide baseline data for management purposes. His work focused on phytoplankton and mosses in the lake, as well as statistical analysis of the entire data set.

Dave's retirement in 1994 freed him to pursue his lifelong love of photography full time. Dave was an accomplished landscape photographer, and his work has been exhibited in several shows, galleries, and books. He claimed that he enjoyed music and photography because they “represent a merger between an impressive technical component and a creative, emotional component.” Dave was a humble human being who never sought the spotlight, but those of us who were fortunate to work with him recognized his unique ability to merge creativity with technical skills, which resulted in his groundbreaking contributions to freshwater ecology.

Submitted by:

**Dean DeNicola, Alan Steinman,
Gary Lamberti, and Stan Gregory**

David L. Kirk (1934-2018)

David L. Kirk, who died November 1, 2018 at the age of 84, will be remembered as one of the most influential green algal biologists of his time. Trained in biochemistry and developmental biology, Dave shifted his research focus from vertebrates to green algae in the mid-1970's, and helped to shape *Volvox* into a premier molecular genetic model for investigating fundamental developmental mechanisms and their evolution. However critical his research accomplishments were to advancing the field of volvocine algal biology, Dave's many other contributions—as mentor, teacher, science outreach ambassador, colleague, and friend—were arguably equally as significant.

David Livingstone Kirk was born March 19, 1934, in Clinton Massachusetts and spent the early part of his life in that area. His parents (mother Elsie was a nurse and father Albert, a textile factory worker) were devout Baptists and named their son after Scottish physician and explorer David Livingstone, in hopes that Dave would become a medical missionary, an aspiration that went unfulfilled. It is believed that Dave knew early on that he wanted to become a biologist, but in college (Northeastern University, in Boston, MA) he chose to major in English Literature because he believed that would be his last opportunity to seriously pursue academic interests outside of science. As a side-note, it would come as no surprise to those who knew Dave and his work well, that he had been a humanities major, given his knack for turning a phrase both in spoken and written word.

After graduating college, Dave moved to the Midwest, where he would spend most of the rest of his life. He earned a Master's degree in Biochemistry at the University of Wisconsin, Madison in 1959, and a PhD there in Biochemistry-Physiology in 1961. It was during this time that Dave met and married his wife Marilyn, a biochemist who was on the faculty at Madison, and that their son Randy was born. Marilyn would later become Dave's indispensable research partner. Dave's PhD dissertation focused on eccrine sweat patterns and he parlayed this work into a brief stint as Senior Research Biochemist at Colgate Palmolive Co. in New Brunswick, New Jersey.



Dave during his first visit to the lab of Rüdiger Schmitt in Regensburg, Germany, in 1987, at the start of their long-time *Volvox* research collaboration.

That work in the industrial sector did not hold Dave's interest for long, and shortly thereafter, in 1962, he left Colgate-Palmolive to begin postdoctoral work in the Department of Zoology at the University of Chicago, under renowned vertebrate developmental biologist Aaron Moscona. His three-year postdoc was quite productive, resulting in four publications, including papers in *Science* and *PNAS*, and subsequently he was hired as Assistant Professor at the University of Chicago, then promoted to Associate Professor there in 1969. However, later that year, Dave moved his family to St. Louis, where he accepted a position in the Department of Biology at Washington University. That move was made primarily because Dave and Marilyn felt that St. Louis was a better place than Chicago to raise their child.

Dave's first appointment at Washington University was as Assistant Professor, and a year later he was promoted to Associate Professor. Not long after, he and Marilyn began searching for a new organism, that was off the beaten research organism path, to focus their life work on. In 1974 they settled on the green alga *Volvox*, after a meeting with Richard Starr, whose lab had recently succeeded in culturing the species (*Volvox carteri* forma *nagariensis*) that Dave would dedicate the next 30 years of his career to.

Multicellular *Volvox*, consisting of just two cell types, large germ cells (gonidia) and small somatic cells, appealed to Dave as a simple yet rich and powerful model for investigating several fundamental aspects of development and complexity, as well as the evolution of that complexity. In the subsequent 10-15 years, Dave became expert on virtually every aspect of *Volvox* biology, from embryogenesis to senescence, and published important phenomenology papers on a wide range of topics, including comprehensive analyses of cell division patterns in the cleaving embryo, embryo inversion, light regulation of protein expression patterns, extracellular matrix composition, induction of the sexual reproduction pathway, and cell differentiation. Of these, cell differentiation held Dave's greatest interest and most of his subsequent research was focused on this topic. Based on the phenotypes of cell-fate mutants that he and others had isolated, he developed a model centered on three classes of genes—*gls* (gonidialess), *reg* (somatic regenerator), and *lag* (late gonidia)—to explain the genetic program for cell fate determination (and its evolution) in *Volvox*. According to this model, *gls* genes are essential for the asymmetric cell divisions that generate large and small cells; subsequently *lag* genes repress somatic features in the large cells, which as a result mature directly as gonidia, while the somatic regenerator gene (*regA*) represses growth and reproductive genes in the small cells, which leads them to terminally differentiate as somatic cells and to ultimately senescence. The problem Dave began to face by the mid-1980's was that to test and extend his model, he needed to clone these key developmental genes, but no molecular tools existed for *Volvox*, and his lab did not have the expertise to develop them.

One of Dave's greatest attributes as a scientist was his collaborative nature, and that strength would soon prove pivotal. At a Keystone conference in 1986, Dave met Rüdiger Schmitt, a molecular Geneticist from Regensburg, Germany, and they struck a harmonious chord at once. They set out plans to (1) to develop tools for molecular-genetic analyses, such as an efficient selection marker, a technique for nuclear



Dave delivering the final talk at the 2007 *Volvox* Symposium at Washington University, an event that celebrated his retirement and his many contributions to the study of *Volvox*. The symposium was attended by representatives from every active *Volvox* lab at the time. During the symposium, Dr. Hisayoshi Nozaki announced the discovery of a new species of *Volvox*, *Volvox kirkiorum*, that he named in honor of Dave.

Multicellularity and Cellular Differentiation” the “Bible” of Volvocology that is required reading for all new entrants to the field. Dave was an inspiring, frequently invited speaker. He would relate that a personal highlight came with an invitation to a 1999 conference in Hayama (Japan), when his host, Hoshi-san, arranged a meeting with Emperor Akihito at the Academy of Sciences in Tokyo, where they had an extensive exchange on the Emperor’s interest in fish taxonomy and his father’s (Hirohito) rich collection of marine organisms. Dave later on commented on this meeting as “a very interesting, surely once-in-a-lifetime kind of experience”.

Throughout the years, Dave also worked tirelessly to strengthen his department, and made important contributions at many levels to Washington University. Notably, he

transformation, and a transposon-based system for tagging and cloning genes; (2) to transposon tag and clone important developmental genes; and (3) to characterize those genes and determine their role in development. Remarkably, 13 years after that fateful meeting, these plans all came to fruition. The concerted efforts of the Kirk and Schmitt labs led to the “capture” and analysis of the *regA* gene, the key to *Volvox* differentiation, which had long been considered the ‘Holy Grail’ of *Volvox* developmental biology. *regA* was found to encode a novel transcription factor that is expressed only in somatic cells (and is essential for repressing expression of essential photosynthetic genes there), and its discovery would later set the stage for other labs to show that *regA* did not exist in the unicellular ancestor of *Volvox* but was generated by gene duplication in a colonial ancestor. Notably the same strategy used to clone *regA* was used to clone other developmental genes, including a *gls* gene and several *inversionless* genes (essential for embryo inversion), though the third class of cell-fate genes (*lag*) would remain elusive.

Ultimately Dave would publish over 45 papers on *Volvox* biology, culminating with his 2010 co-authorship (3 years after his retirement) on the Science *Volvox* genome paper that was made possible by his contribution of *Volvox carteri* genomic DNA and by his insightful discussions and comments during the genome analysis. His best read and most-cited written work is his Cambridge University Press book, “*Volvox: A Search for the Molecular and Genetic Origins of*

chaired five faculty search committees (including the ones that brought key faculty Ursula Goodenough, Ian Duncan, Sally Elgin, and Kathy Miller to the department), and he served on numerous committees relating to graduate and undergraduate education/recruitment and other campus activities, including humane care of laboratory animals, despite the fact that his research at Washington University never involved animals. Indicative of his deep interest in political issues, Dave was co-founder and co-chair of "Canvass for Peace" during the Viet Nam war. And always one to promote scientific interactions, for over a decade Dave served as "cultural advisor" for exchange students from Regensburg to participate in laboratory research, in A-level courses, and other campus activities.

Those fortunate enough to be taught, trained, mentored, and/or befriended by Dave knew him as an important person in their life. As teacher, Dave brought to the classroom an impenetrable knowledge of his topic, and a knack for infusing context and humor in ways that made the subject relevant and engaging. He was versatile, over the years teaching more than a dozen different classes, ranging from introductory biology to vertebrate development, and graduate courses in developmental and cell biology. He found time to co-author multiple editions of a popular introductory biology textbook, *Biology: The Unity and Diversity of Life*, which is now in its 15th edition. As mentor, Dave had high expectations and instilled independence in his students and postdocs, but he was kind, patient, and ever generous with his time, talents, and other resources. He was known to insist/demand that his name be left off a manuscript that detailed work begun in his lab but finished elsewhere, in order to maximize the impact of the publication for the trainee, and to relinquish funds from a co-authored grant to jumpstart the career of a departing postdoc. Dave rarely if ever offered unsolicited help or advice, but when it was sought from him, he was always there to provide it, with thoughtfulness and undivided attention. His mentorship extended well beyond the boundaries of his lab. Many from within or outside Washington University sought his counsel on issues related to science or not, because Dave was so insightful and clear-thinking. In fact, it was common to hear someone say that Dave was the smartest person they had ever known.



David and Marilyn at the Pacific coast near Monterey California, in May 1992. They fell in love with this area in the early 1970's while, with family in tow, Dave took a course at the Hopkins Marine Station during his search for a new research organism. Dave and Marilyn's ashes are dispersed in the sea near Monterey.

His depth and breadth of knowledge could seem intimidating, but those who knew Dave well were put at ease by his wit and humility. He often signed his missives “Decay”, as a self-deprecating play on his initials.

Somehow, Dave managed to find the time to cultivate interests outside of science, including classical music, photography, gardening and cooking. He was also deeply devoted to his family. His son Randy, a Cal Tech PhD and long-time geophysicist with the USGS Astrogeology Research Program, noted that his parents encouraged his curiosity and interest in science from an early age, in a variety of ways. There were stimulating dinnertime conversations, hobbies, projects, and excursions. Dave taught Randy how to take, develop, and print photographs, and not coincidentally Randy has built his USGS career around digital imaging and image processing, making critical contributions to the digital mapping of Mars and other celestial bodies.

Dave retired from his faculty position at Washington University in 2007 to care for Marilyn, who by then was in declining health. She died in 2010. He remained connected to the academic community nearly until the time of his own death, but devoted more and more time to science outreach, especially related to the teaching of evolution at the K-12 level. He served as faculty fellow for Washington University’s Institute for School Partnership, provided books for the organization’s book club and led discussions, and funded the David and Marilyn Kirk Teacher Fellowship, which supports a leader in evolution education in the St. Louis area. As he related in spring 2018 to his long-time friend and colleague Rudy Schmitt, in the last correspondence they shared, Dave was particularly proud to be honored that year as “Outstanding Science Educator” by the St. Louis Academy of Science. It seems a fitting piece of David Kirk’s legacy, that it mattered so deeply to him that everyone, from the earliest school ages on, understand how evolution works. His beloved *Volvox*, the model system he and Marilyn worked so hard to advance, continues to play a leading role in unraveling the mystery of how lineages of organisms change over time.

**By Rüdiger Schmitt
and Stephen M. Miller**



*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](#).*

Savas Haritonidis (1938-2019)

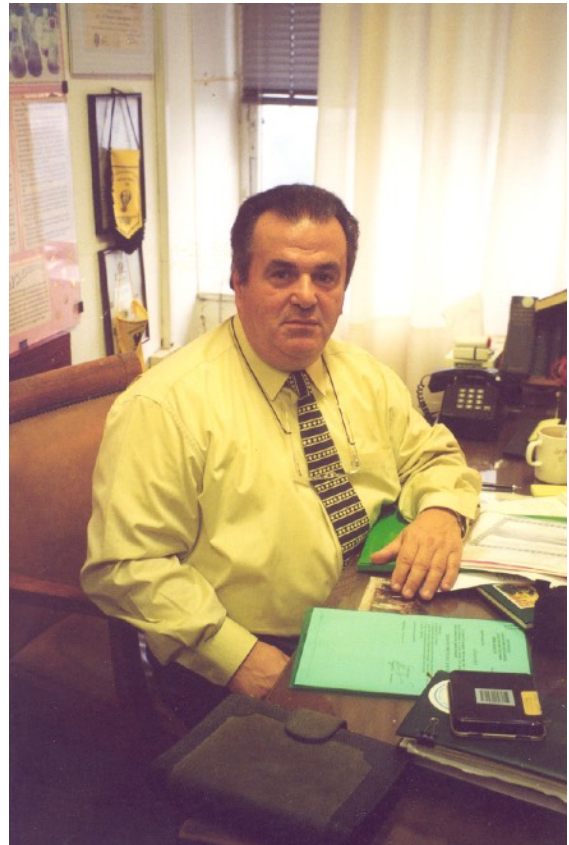
The Hellenic Phycological Society (HEL.P.S.) expresses its deep sorrow on the passing away (January 9, 2019) of its colleague Dr. Savas Haritonidis, a well-known Professor of Biology at the Aristotle University of Thessaloniki. He was a founding member and a member of the Board of Directors of HELPS.

Professor Savas Haritonidis was born in Thessaloniki in 1938, where he completed his studies in primary and secondary education. As a scholar of State Scholarships Foundation (SSF, IKY) he studied at the Natural Sciences Department of the Aristotle University of Thessaloniki, where he graduated in 1963, and since 1960 he has been a voluntary technical assistant at the Botanical Laboratory. After completing his military service (1963-1965), he continued to work as a graduate technician at the Botanical Laboratory (1965-1971). In the period 1971-1978, he was employed as an assistant and the period 1979-82 as permanent curator. In 1979 he completed his doctoral thesis, and in 1982 he was elected lecturer, in 1984 as an assistant, in 1987 as an associate and in 2000 as a full Professor in the Botany Department. Professor Savas Haritonidis retired on 31-8-2005 and died on 9-01-2019.

Since 1965 he has taught various courses such as General Botany, Plant Physiology, Hydrobiology, Phycology, Oceanography, and Aquaculture in undergraduate students of the Departments of Natural, Biological, Pharmaceutical and Agricultural Sciences of the Aristotle University of Thessaloniki. Since 1995 he has participated in the postgraduate program of Hydrobiology & Aquaculture.

His scientific research objects were "taxonomy, geographic distribution, and ecophysiology of macroalgae, pollution-eutrophication, and protection of the marine environment." He has been trained at the University of Giessen Germany (1980-1981, 1992), at the Netherlands Delta Institute (1991), and during the period 1986-1999, he frequently visited the Kiel Hydrobiological Station in Germany.

He has been scientifically responsible or participated in several research projects, including European ones, such as the EUMAC (eutrophication and macrophytes), which funded part of the doctoral theses and undergraduate and postgraduate diploma theses he supervised. He published 68 original papers in peer-reviewed scientific journals and 50 articles in scientific conferences, both Greek and international. He also participated in the organization of Greek or international conferences.



On behalf of HEL.P.S.,

**Sotiris Orfanidis
President
Walnut Creek, CA**

Dr. Yaacov Lipkin (1935-2019)

Dr. Yaacov Lipkin, one of the early pioneers to study the algae and seagrasses of the Israeli coast and the Sinai Peninsula, passed away in March 2019.

Dr. Lipkin received his MSc from the Hebrew University of Jerusalem in 1962. His Master's thesis study, "Ecological Observations on the Mikmoret Coast," carried out under the supervision of Prof. I. Friedman, won a distinction. In 1963 he embarked on his doctoral studies at the Hebrew University, under the supervision of

Profs. M. Zohary and G. Orshan. That same year, as a doctoral candidate, he began teaching at the Botany Department of the then-new Tel Aviv University. Dr. Lipkin completed his dissertation, "Vegetation of the Southern Negev Desert," in 1972, when he earned his PhD. He continued to perform research and teach at Tel Aviv University until his retirement in 2005.

In the spring of 1962 and autumn of 1965, Dr. Lipkin took part in two International expeditions that explored the marine fauna and flora of Eritrea (mostly of the Dahlak Archipelago). In 1972-1973 he was a post-doctoral fellow at Texas Tech University. There, he worked with Prof. V.W. Proctor on the study of desert algae and the Charophyte species of Israel. He was a research fellow at the University of California in Berkeley in 1973-1974 and 1977. While there, he studied specimens from the 1960's expeditions to the Southern Red Sea (Eritrea) with Prof. G.F Papenfuss and Dr. P. Silva. Lipkin and Silva completed and published this study in 2002. Dr. Lipkin returned to Berkeley again in 2004. In 1981-1982 Dr. Lipkin was a research fellow at the University of Adelaide in Southern Australia, where he studied the local marine flora with Prof. B. Womersley. He continued these studies at the universities of Sydney and New South Wales in 1982, 2000 and 2005.

Dr. Lipkin described new species of *Pterocliadiella*, *Hypnea* and *Sargassum* with Papenfuss and Silva. He was a member of several international phycological and other associations, participated in many international conferences and symposia, and published numerous articles and professional publications. He taught many undergraduate students, MSc students, and several PhD students. In addition, he amassed an encompassing professional



library, and created Israel's largest collection of dried and preserved algae and seagrasses (now at the Tel Aviv University Museum of Natural History).

Dr. Lipkin was a true naturalist. When Sinai was still under Israeli rule, he led his students and associates, as well as international groups of seagrass researchers (including Prof. C. den Hartog), on yearly week-long trips to the Sinai Red Sea shores. There, they studied the until-then unknown seagrass flora, as well as macroalgae and the mangrove-associated biota. While pioneering scientific SCUBA diving in Israel during the days, he spent long evenings explaining natural phenomena to his followers – he was a “walking encyclopedia” of natural history knowledge! Dr. Lipkin was also instrumental in describing the migration of the seagrass *Halophila stipulacea* from the Red Sea to the Mediterranean; this species has now spread as far as the Caribbean. Dr. Lipkin was a meticulous author who demanded that every detail of his scientific findings be confirmed and re-confirmed before publishing them. Accordingly, many of his papers are now considered as key publications in today's scientific work on marine macrophyte ecology.

After his retirement, Dr. Lipkin pursued some of his non-academic interests. Among others, he threw himself into the study of Israeli and Jewish history, as well as genealogy. He left behind a wife, four children, and eight grandchildren.

Submitted by Razy Hoffman

Leonard Dyck (1955 – 2019)

Leonard Dyck (Len) was killed in northern British Columbia allegedly by suspects whose bodies were found on August 7, 2019.

Len was an avid camper, and he was on one of his summer trips when this event occurred. These camping trips were sometimes family affairs, sometimes with one of his sons but, in this case, he was on his own.

Len came to the University of British Columbia (UBC) as an undergraduate student, and over an extended time completed his M.Sc. and Ph.D., both with Professor Robert DeWreede. While an undergraduate, Len completed an Honour's thesis co-supervised by Professors David Garbary and DeWreede. In his time in the DeWreede lab, Len engaged happily with many concurrent graduate students in field work, especially at the Bamfield Marine Sciences Centre, and he served as a supervisor in several undergraduate research projects.

Len focused most of his research on the red algal species *Mazzaella splendens*, with an abiding interest in the relative abundance of its isomorphic haploid and diploid generations. For the last 30+ years, Len had been surveying *Mazzaella* populations around British Columbia in pursuit of the broad question: how do algal life histories maintain equally viable haploid and diploid generations, when other life forms have

evolved to a diploid dominant life history. Len continued to study 'his' organism as he served as a Sessional Lecturer in the Department of Botany at UBC, where he conveyed his enthusiasm for algae – both big and small – to countless undergraduate students. He also enjoyed engaging in many broadly ranging philosophical musings with students, some a far distance from phylogenetic topics.

Len was a friend, colleague, willing helper, and mentor to many past and present faculty, staff, researchers, and students at UBC. He will be greatly missed.

A GoFundMe account has been set up to help support Len's surviving wife and two children. If you would like to donate, you may do so here: <https://tinyurl.com/y3x9ywhr>

Some of Dr. Dyck's publications are:

Dyck, L., R.E. De Wreede and D. Garbary. 1985 Life history phases in *Iridaea cordata* (Gigartinales): relative abundance and distribution from British Columbia to California. *Jap. J. Phycology* 33: 225-232.

Dyck, L. and R.E. De Wreede 1995 Patterns of seasonal demographic change in the alternate isomorphic stages of *Mazzaella splendens* (Gigartinales, Rhodophyta). *Phycologia* 34: 390-395.

Dyck, L.J. & R.E. DeWreede 2006 Seasonal and spatial demographic patterns in the marine macroalga *Mazzaella splendens* (Gigartinales, Rhodophyta). *Phycological Research* 54: 21-31.

Dyck, L.J. and R.E. DeWreede. 2006 Reproduction and survival in *Mazzaella splendens* (Gigartinales, Rhodophyta). *Phycologia* 45: 302-310.

Congress Proceedings:

Ang, P.O., Jr., R.E. De Wreede, F. Shaughnessy and L. Dyck. 1989 A simulation model for an *Iridaea splendens* population in Vancouver, Canada. 13th International Seaweed Symposium, Vancouver, Canada.

Dyck, L. & R.E. DeWreede 2001 Life history phase dominance in *Mazzaella splendens*; the relative contributions of new blade production and survivorship. 17th International Seaweed Symposium, Feb. 2001, Cape Town. South Africa.

Dyck, L.J. and R. E. DeWreede 2001 Survivorship and new blade production in *Mazzaella splendens*: their relative importance in life history phase determination. . 15th NW Algal Symposium, Camp Casey, Whidbey Island, Washington.

Dyck, L.J. & R.E. DeWreede 2004 Size and survival in *Mazzaella splendens* at Second Beach, Barkley Sound. 18th NW Algal Symposium, Bamfield Marine Sciences Centre, Bamfield, B.C.



Dr. Len Dyck at Clover Point, Victoria, BC, holding two brown seaweeds, *Desmarestia aculeata* and *Desmarestia viridis*. March 2017. Photo credit Patrick Martone

**Submitted by Robert DeWreede
and Patrick Martone**

Meetings and Workshops

41st Annual Southeastern Psychological Colloquy

26 October 2019

Birmingham, Alabama

The 41st Annual Southeastern Psychological Colloquy (SEPC) will be held on **26 October 2019 at the University of Alabama at Birmingham**. An informal gathering will be held at a local establishment the evening before for participants who are able arrive then. Information on registration etc. can be found at <https://www.quooddy.com/sepc-2019.html>. The SEPC is a small, informal meeting in which students have priority for oral presentations and are encouraged to present on projects that are underway or which are nearing or at completion.

Shop at AmazonSmile
and Amazon will make
a donation to:
**Psychological Society Of
America Inc**

[Get started](#)

amazonsmile

<http://smile.amazon.com>

When you shop @AmazonSmile
<<http://smile.amazon.com/ch/43-0898177>>, Amazon will make a donation of 0.5% of the purchase price to the Psychological Society Of America Inc. Support us every time you shop.

**Help spread the word by Liking
and sharing the link on our
Facebook page!**

MARINE BOTANY: Diversity and Ecology

Friday Harbor Laboratories, University of Washington

Dates: 14 June to 17 July 2020

Instructors: Dr. Thomas Mumford

(tmumford@u.washington.edu) and Dr. D. Wilson

Freshwater (freshwaterw@uncw.edu)

Review of applications begins: 1 February 2020

The theme of the course is principles, methods, and applications of marine algal biodiversity studies with a focus on the macroalgae of marine benthic environments. Students will learn classical and contemporary methods for the identification, classification, and phylogenetic analysis of marine benthic algae (seaweeds); the theories underlying the methods, and the application of biodiversity information in (for example) benthic ecology. They will gain practical experience in such tools as: specimen collection, preservation, microscopy, DNA isolation and sequencing, computational approaches to phylogeny reconstruction, DNA barcoding, and databasing. Fieldwork will be extensive, as the diverse and species-rich habitats around San Juan Island provide ideal sites for the examination of macroalgal diversity.



Students will participate in research projects using morphological, ecological and molecular data to assess the diversity of algal populations and to interpret that diversity in its ecological and biogeographic context. The class will also continue to populate the “Marine Algae of the San Juan Islands” BOLD system database project and publish a new public dataset for the project.

This is a course appropriate for advanced undergraduate and graduate students, as well as, professional marine biologists, botanists, geneticists, and oceanographers with interests in marine biodiversity, conservation biology, and coastal ecology. Course participants will leave with a toolbox of methods to assess these topics in any nearshore ecosystem in the world.

Students receive 9 (quarter system) or 6 (semester system) transfer credits for the course. For information on the Friday Harbor Labs, including how to apply, housing, and financial aid packages, visit: <https://fhl.uw.edu/>. Specific information on the 2020 classes will be available on the FHL webpage in October 2019 and applications may be submitted as soon as this information is posted.

There are many Friday Harbor Labs financial aid opportunities for those students who can demonstrate financial need or academic merit, visit: <https://fhl.uw.edu/courses/fellowships-scholarships/>

For requirements and how to apply for a PSA Croasdale Fellowship that helps defray costs to attend a phyecology course at a biological field station, visit:

<http://www.psaalgae.org/hannah-t-croasdale-fellowship>

BOOK TITLES

Chrysophytes. Taxonomy, biodiversity and palaeoecology

Proceedings of the Ninth International Chrysophyte Symposium

Ed.: Richard W. Jordan; Jun Yokoyama

2019. XVII, 164 pages, 415 figures, 17 tables, 24x17cm

(Nova Hedwigia, Supplements No. 148)

ISBN 978-3-443-51070-1, paperback, 109.00 €

www.schweizerbart.de/9783443510701

The present volume features twelve scientific papers presented at the 9th International Chrysophyte Symposium (ICS9) in Yamagata, Japan, September 11-15, 2016. Ten of the twelve papers in this volume deal with chrysophytes/synurophytes, the remaining two with diatoms.

The volume is subdivided into four distinct parts: taxonomy, biodiversity, culture work, and palaeoecology. The first part includes discussion of *Clathromonas* and *Paraphysomonas* from the Mediterranean Sea, and the descriptions of two new taxa (*Chrysosphaerella nichollsii* from West Java and *Aneumastus mongolotusculus* from Mongolia), while the second part describes living assemblages in lakes, bogs or puddles from China, Russia and Vietnam. The third part presents new data on the formation of lipids in four species of *Chaetoceros*, while the last part describes the use of a FlowCam for cyst morphometric studies, introduces fossil assemblages from the Southern Ocean, and revisits the naming vs. numbering problem for stomatocysts. This volume continues the tradition of providing up-to-date information and ideas on the chrysophytes, synurophytes and related algae. It also reflects the diversity of topics that are currently being studied by specialists around the world; these include not only studies on freshwater habitats, but also marine habitats, in addition to fossil assemblages in land-based and deep-sea cores, too.

order information:

www.schweizerbart.com

order@schweizerbart.de

Marine Macro- and Microalgae: An Overview

1st Edition

F. Xavier Malcata, Isabel Sousa Pinto, A. Catarina Guedes

CRC Press

Published December 6, 2018

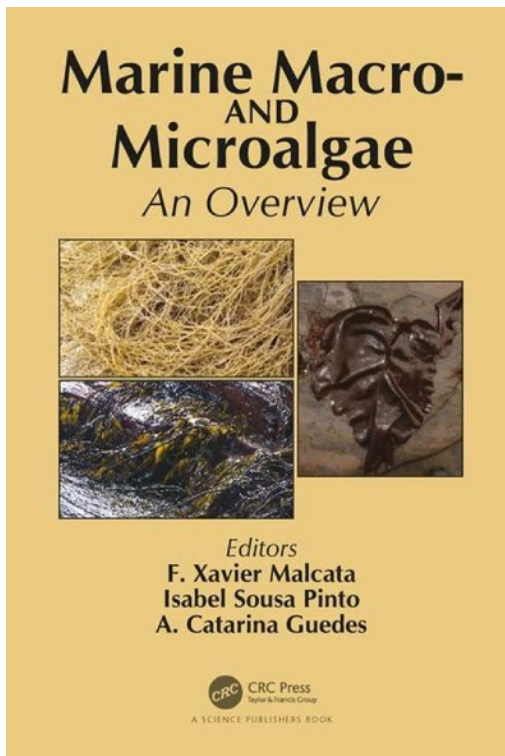
Reference - 334 Pages - 14 Color & 27 B/W Illustrations

ISBN 9781498705332 - CAT# K24761

Summary

The marine environment accounts for most of the biodiversity on our planet, while offering a huge potential for the benefit and wellbeing of mankind. Its extensive resources already constitute the basis of many economic activities – but many more are expected in coming years. This book covers current knowledge on uses of marine algae to obtain bulk and fine chemicals, coupled with optimization of the underlying production and purification processes. Major gaps and potential opportunities in this field are discussed in a critical manner.

The current trends pertaining to marine macro- and microalgae are explained in a simple and understandable writing style. This book covers a wide variety of topics, and as such it will be appropriate as both student text and reference for advances researchers in the field.



Marine Phytoplankton. Selected microphytoplankton species from the North Sea around Helgoland and Sylt.

Hoppenrath, Mona, Malte Elbrächter and Gerhard Drebes

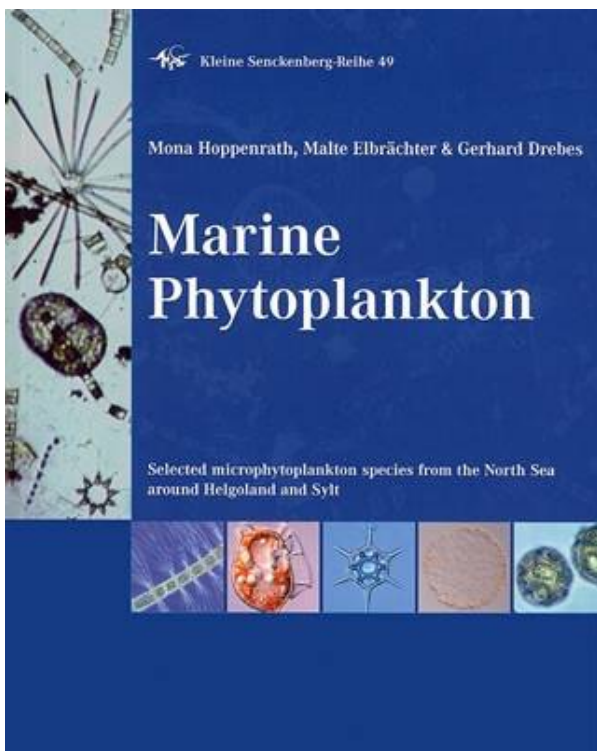
2009. (Reprint 2019). Kleine Senckenberg – Reihe, 49). 87 plates. 264 p. Paper bd. EUR 18.80

Koeltz – Book ID: 97061

Provides a key to determine almost 300 phytoplankton species from the North Sea around Helgoland and Sylt, documenting them with close to 1100 images and 70 line drawings on 87 plates. This book is an important contribution to our understanding of marine phytoplankton of North Sea ecosystems.

Available from KOELTZ BOTANICAL BOOKS

www.koeltz.com



EMPLOYMENT

Postdoctoral fellow

The State Key Laboratory of Marine Environmental Science at Xiamen University (MEL) invites applications for Postdoctoral Fellowship in the fields of marine environmental sciences and other interdisciplinary research that fits into MEL's major research scopes (see scopes at http://mel.xmu.edu.cn/people_research.asp?id=12). For those with phycological backgrounds, please contact Prof. Kunshan Gao (http://mel.xmu.edu.cn/staff_publications.asp?tid=35) at ksgao@xmu.edu.cn

Candidates should have obtained their PhD degree in the 3 years prior to the submission deadline or get their degree within one year after being accepted by our program (in this case, related documents should be provided to prove eligibility) .

The principal selection criteria for Fellows are scientific excellence and a clearly-stated research proposal at the forefront of marine environmental sciences. Applications from all related fields are welcomed.

Fellowships are supported institutionally for 24 months (can apply for extension to 36 months), carry an annual salary of 240,000 RMB (before tax), and a travel fund of up to USD 2,000 within the valid fellowship period. Excellent fellows may apply for the faculty positions in Xiamen University.

Postdoctoral Researcher in Experimental Algal Evolution

The Long-Term Phytoplankton Evolution (LTPE) Lab at the University of Alabama in Birmingham is seeking a postdoctoral researcher as part of a newly funded project focusing on the evolution of phytoplankton/bacterial interactions. Responsibilities will include extensive culture work with *Prochlorococcus* and other marine phytoplankton as well as bioinformatic analysis of laboratory and natural phytoplankton communities. The ideal candidate will have extensive microbiology culture experience as well as some exposure to bioinformatics or coding.

This 2-year renewable position comes with a competitive salary (\$55,000/year) and full UAB benefits. Applicants should send a letter of introduction, a CV, and three references to Dr. Jeffrey Morris at evolve@uab.edu.



**Submit your contributions to the next
Phycological Newsletter by January 15, 2020**

**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

Jeffrey Morris

evolve@uab.edu