
PHYCOLOGICAL NEWSLETTER

MESSAGE FROM THE PRESIDENT



PSA President Dale Casamatta

Hello Fellow Phycophiles,

It is with great pleasure and humility that I greet you all as the new PSA President! Like all of you, I am excited to be a member of this fantastic, intriguing scientific Society dedicated to all things algal. The profile of algae has evolved greatly over the last two decades, with anthropogenic alterations to our environment making algae a by-word for climate change, renewable resources, and eutrophication. This is an exciting time to be a phycologist, and the Society is poised to meet these changing times. So, what's on-tap for the Society? Well...

We are happy to announce that **this year's Annual Meeting** we will be held in **Providence, Rhode Island (June 14-18)**. Organized by the redoubtable **Amy Carlile**

with **Chris Lane** as the excellent Local Organizer, the meeting this year will be filled with exceptional opportunities to explore all things algal. In addition to classic symposia such as the Presidential, Bold, and Student forums, we will also be unveiling the new Journal of Phycology Co-editor Symposium. We will also host a bevy of exciting educational opportunities and workshops, and a plethora of great talks, posters, and opportunities for collaborative endeavors.

Given the dynamism of algal research, we are also pleased to have an opportunity to unveil some new potential trajectories for both the meeting and the journal. The extraordinary efforts of both past and present phycologists are allowing us to branch off into new directions of algal research, and we are excited to have this opportunity to continue to explore our favorite organisms with our characteristic passion and drive. Please keep an eye open for future announcements.

A publication of the PHYCOLOGICAL SOCIETY OF AMERICA

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Our society is fortunate to have many fantastic members and officers, whose tireless efforts are legion. This year we say thank you and farewell (from their posts, that is) to several folks: **Kirsten Müller** (University of Waterloo) for her herculean efforts as PSA President, **James Wee** (Loyola, NO) for his dedicated mastery of the Elections Committee, and **Arley Muth** as our extraordinary student representative (University of Texas). On the other side, we have several new officers: **Eric Linton** (University of Central Michigan), our new Vice President / President-Elect, **Dail Laughinghouse IV** (aka southern Dail, University of Florida) as our new Election Chair, **Shonna Manning** (University of Texas) as our incoming (for 2021) Program Director, and **Sabrina Heiser** (University of Alabama at Birmingham) as our Student Representative.

I thank you all for the opportunity to be a part of this august Society, and if I may ever be of any help, or if you would ever like to provide any feedback/suggestions/etc., please do not hesitate to contact me. See you all in Rhode Island this summer!

Yours in phycological friendship,
Dale Casamatta





Calling all algal enthusiasts!

We are looking forward to welcoming you to historic Providence, Rhode Island for the 74th annual PSA meeting, **June 14-18, 2020!** We will convene at [the Graduate Providence Hotel](#) (formerly the Biltmore).

Lodging: We have secured a great group rate - **\$175/night** for either a deluxe King room or a junior suite with 2 King Beds (great for sharing with a separate living room!). Online reservations can be made through this [link](#) or call a Hotel Reservations Agent at 401-421-0700 and choose Option 1; quote our group reservation code 2006ACANNU. The cut-off for reservations at this reduced rate is **May 22, 2020**.

Program: We have an outstanding program with excellent speakers lined up; here's a preview:

- Presidential session on the latest research on cyanobacteria, featuring a plenary talk by **Lynn Rothschild** (NASA Ames Research Lab), followed by a symposium from **Jeff Johansen** (John Carroll U.), **Nicole Pietraski** (New Mexico State U.), and **Jan Mares** (U. of South Bohemia)
- A symposium organized by Chris Lane, *Putting a face to a sequence*, will focus on making the connection between the biodiversity apparent by deep amplicon sequencing and getting organisms into the lab for research on their lifecycle, metabolism, and physiology.
- The *Bob Sheath Journal of Phycology co-editor's symposium* will highlight cutting edge research from across our field.
- **The first Lang Lecture!** Our first Lang Fellow, **Dr. Holly Moeller**, will give an overview of the work completed during her fellowship.

Workshops: Our education committee has two very practical methods-related workshops planned for the Sunday afternoon before our opening mixer:

- **Processing metabarcoding data**, with Dr. Daniela Lopes Paim Pinto (University of Rhode Island)
- **Methods for using PAM fluorometry** in phycology, facilitated by Dr. Nadine Schubert (Centro de Ciências do Mar, Portugal) and Dr. Jennifer Clark (University of British Columbia)

We will be posting more on the [meeting website](#), so please look there for up-to-date information. We look forward to welcoming you to beautiful Providence, RI!

Amy Carlile, PSA Program Director
Chris Lane, Local Organizer



The Graduate Providence Hotel

Hoshaw Travel Awards are to help students with their travel expenses to the annual PSA meeting. All other factors equivalent, students who will present their research at the meeting (lecture or poster) will be given priority, with a mean award size of approximately \$500. The deadline for the completed application will be announced concurrent with abstract submission for the 2020 PSA Meeting. Successful applicants will be notified prior to the meeting and the awards will be presented at the meeting.

For further information, please contact: Sophie McCoy (email - mccoy@bio.fsu.edu).

An Interview with 2019 Norma J. Lang Fellow Sophie McCoy

Dr. Sophie McCoy of Florida State University was awarded the third Norma J. Lang Fellowship in 2019. 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: Can you tell us a little about your background? What are the big questions that have motivated you as you've come up through the ranks?

SM: Chemistry is what first attracted me to science. During my sophomore year of college, I was looking for labs that I might want to join, and realized that I was not really interested in making things, but wanted to use analytical chemistry as a forensic tool. Eventually, that brought me towards ecological questions about climate change and the discovery of phycology when I started graduate school. I think that trajectory is still reflected in my research, which incorporates a lot of chemistry and geochemistry into questions about ecophysiology of macroalgae. Understanding the process of algal calcification continues to be a major interest.

JM: Would you mind sharing a little insider information about Sophie the person? What do you enjoy doing in your off-time? As a successful early-career scientist, what's your philosophy on balancing your professional responsibilities and your personal time?

SM: Balancing personal time and professional responsibilities is something I still struggle with a lot. Part of that is because the stereotype about loving your work is true for so many of us, but I am learning how important it is to create separate time so that I can continue to be passionate about my work in the long-term and enjoy my relationships with friends and family. At home, we have a lot of pets – cats and dogs – and I love spending time with them. I try to work from home at



Lang Fellow Sophie McCoy and friends at the beach

least one half-day per week as writing-focused time, usually with several animals watching me from under the desk! During cooler weather in Tallahassee at this time of year, I like to run on wooded trails with our younger dog.

JM: What do you plan to accomplish in your first year as a Lang Fellow? Give us your “elevator speech” explaining the work you’ve proposed.

SM: I am really excited about the direction my work is moving in. While my passion has been to understand effects of climate change and other stressors on algal physiology and coastal ecology, there has always been a part of me that was really curious about evolution and speciation. The project I proposed for the Lang Fellowship unites these themes in a logical way. There has been a lot of activity sequencing the red algae, and particularly finding new cryptic species complexes within the coralline algae, a group I have specialized in from an ecological perspective. I recently found differences in use of carbon concentrating mechanisms between cryptic species, and plan to explore this potential ‘niche axis’ in greater detail.

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?

SM: A senior colleague recently told me that failure is our way of life. Failures in the field or in the lab have never bothered me too much, because I manage to learn something each time. I struggle much more with grant rejections, which I take more personally, as a rejection of an idea I have cradled and perfected for months. For major grants, I usually do not read reviewer comments for at least one week after learning of a rejection. This helps me distance myself from a sad or angry response and actually take in the content of reviewer comments.

JM: Where do you see yourself as a scientist in 10 years? Will you still be coming to PSA meetings?

SM: My research will continue to link macroalgal physiology, ecology, and evolution by combining field and laboratory approaches. Technology is making it easier to study physiology in the field, which helps contextualize the roles of physiological traits in community interactions. I look forward to growing my research lab group along those themes and for my lab group to become a greater presence at PSA meetings. As I become more established, I also hope to contribute more directly to impact marine conservation and policy.

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

SM: PSA has played an incredible role in the development of my research and my career. I had the privilege of working closely with **Cathy Pfister**, my PhD advisor, who introduced me to fieldwork and phycology, and **Bob Paine**, who painstakingly guided me through the world of intertidal crusts. As a student, I received a PSA Grants-in-Aid of Research that enabled me to dive into my dissertation research in my second year of graduate study. I attended my

first PSA meeting in 2013, where I connected with phycologists whose work had guided the development of my interests for years, and who are now collaborators on various ongoing projects. My first dissertation chapter was also published in the Journal of Phycology in 2013, which is a milestone I still cherish. The Journal of Phycology is a remarkable collection of interdisciplinary work in phycology at the center of our community, and reading papers published there was my first interaction with the greater phycological community.

In addition to being awarded the Norma J. Lang Early Career Fellowship this year, I was also the Bold Award recipient in 2013. These awards have had a major impact on my career, providing validation for my work from the phycological community that has buoyed my self-confidence and motivation to continue in academic research. I am grateful for the collegiality of the PSA community and how eager PSA is to support student and early career researchers. As a long-time member and now chair of the Student Grants Committee, it's rewarding to see how generous PSA members are with their time and expertise on our committee.

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

SM: Phycology spans so many biological disciplines, and encompasses incredibly divergent biodiversity. This can be overwhelming, and it's ok to feel that way! Don't be afraid to reach out to others for collaboration and advice. And... **apply for PSA grants!**

THE NORMA J. LANG EARLY CAREER FELLOWSHIP

In 2020, PSA will select its 4th Lang Fellow. Named in honor of the late Norma J. Lang, this fellowship will grant a one-time payment of \$10,000 to one early career researcher, who will be a Norma J. Lang Fellow for three years. Applications will be accepted from Postdoctoral Fellows, Pre-Tenure Faculty, and others (those not in traditional academic positions) who are members of the society and are within 10 years of completing their Ph.D. Applications from international members are welcome, but all application materials must be in English. Individuals must be employed by a university or other non-commercial entity and be doing research on algae. The purpose of this award is to provide "seed" money for projects, with the ultimate goal of increasing the likelihood of federal or other grant funding for the recipient. It is expected that the Fellow's home institution will cover any indirect costs as an institutional match.

For more information please go to <http://www.psaalgae.org/norma-j-lang-fellowships/Application>

Deadline: April 1, 2020

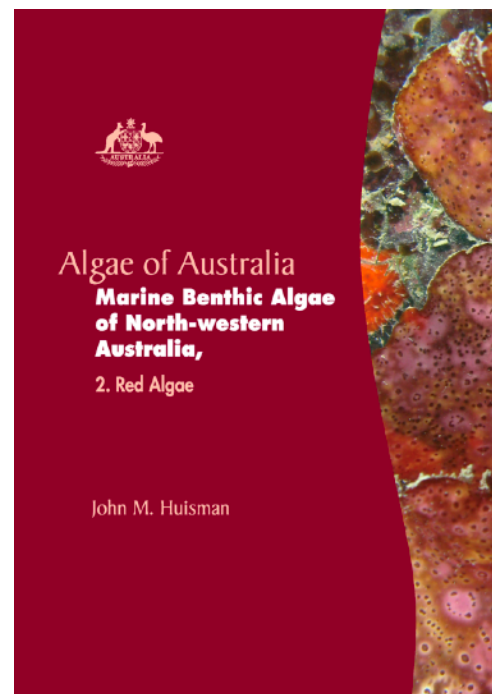
The Lang Fellowship and PSA's many other student and postdoc awards are sustained by charitable contributions to the Phycological Society of America Endowment. Contributions can be made via Paypal:

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

The 2019 Gerald W. Prescott Award

The Gerald W. Prescott Award recognizes scholarly work in English in the form of a published book or monograph devoted to phycology. This year the Prescott Committee received four nominations for books and monographs published in 2017 and 2018. Each of the nominated books were outstanding contributions to the field of phycology. After lengthy and careful deliberation, this year's award is presented to **John Huisman for "Algae of Australia: Marine benthic algae of northwestern Australia, 2. Red algae." (2018, CSIRO Publishing, Locked Bag 10, Clayton, South VIC 3169, Australia. [ISBN 9781486309542]).**

This volume provides descriptions of the red macroalgae ranging across tropical and warm temperate ecosystems in a region of Australia that has been understudied due to its remoteness. The volume complements the 2015 publication of the region's green and brown macroalgae by the same author. The monograph includes newly described genera and species (7 and 88, respectively); some were described by the author, others reflect the work of the author and collaborators. The taxonomic work incorporates both morphological and molecular data and has keys, photographs, and diagrams to help readers who are new to this flora. Excellent and detailed reviews of the book are provided by Kraft (2019) and Wynne (2019), which we encourage you to read along with John's book. As Kraft (2019) suggests, "If the reader has a favorite family or genus of warmwater red in any number of taxonomic groups, he or she is sure to find endless pleasure in delving deeply into or just recreationally browsing big chunks of this very user-friendly book." Congratulations John!



High School PSA member is named one of top 300 U.S. STEM students of 2020 for research on *Volvox*

by Rick McCourt

Many of you who have attended the PSA Annual Meeting the last few years may have noticed an unusually young poster author presenting his work on the swimming behavior of *Volvox*. This slender, energetic young phycologist and PSA member was **Ravi Balasubramanian** of Harriton High School outside Philadelphia, and he has been named one of the *top 300 high school science scholars by the Regeneron Science Talent Search for 2020!* This competition used to be sponsored by the Intel Corporation and is one of the premier science competitions for high schoolers. This is a fantastic honor, and I wanted to share with PSA members more of Ravi's background and his research. His is a remarkable story and a reminder that students are never too young to start working on algae.

According to its web site, the [Regeneron Science Talent Search](#), founded and produced by [Society for Science & the Public](#), is the nation's oldest and most prestigious science and math competition for high school seniors. [Regeneron](#) assumed title sponsorship of the Science Talent Search in 2017 and increased the overall awards distribution to better reward the best and brightest young minds. Through its 10-year, \$100 million commitment, Regeneron nearly doubled the overall award distribution to \$3.1 million annually. Ravi received a \$2000 award for his being named to the top 300 scholars. This year, the Regeneron Science Talent Search scholars were selected from 1,993 applications, which were received from 659 high schools in 49 states, Washington, DC, Puerto Rico, Guam and eligible students living in eight other countries. The scholars were selected based on their exceptional research skills, commitment to academics, innovative thinking and promise as scientists.

I have had opportunity to mentor Ravi and observe his talents and work habits for more than five years. I have seen him grow, literally from being a foot shorter than me to about a foot taller. But even more amazing, of course, has been his intellectual growth from science fair contestant to presenter at national and international scientific meetings and author of manuscripts submitted to peer-reviewed publications in biology and physics. Through it all Ravi's unflagging enthusiasm and drive to discover and communicate about his scientific endeavors has been clear. He is one of a kind. Some students you instruct, others you drill, some you correct and push, and for the rare few you



Ravi Balasubramanian at the 2016 PSA meeting in Cleveland

launch them and provide course corrective advice but otherwise try not to get in their way. Ravi is definitely the latter type.

Ravi first approached me when he was in middle school, asking for advice about using microalgae for a science project. I study conjugating green algae in my laboratory at the Academy of Natural Sciences of Drexel University and have a culture collection of strains growing in defined media. Ravi found us online and came to discuss his project with me and postdoctoral fellow Dr. John D. Hall. We gave him information on how to mix media and isolate algae into clonal culture, and provided him with some starting vials, flasks, and pipettes, along with lighting requirements for the algae. With this starter kit of information and material, Ravi proceeded to construct a successful experiment to study the responses of two species of microalgae to varying levels of nutrients. He won a science fair prize and the next year came back to expand his studies.

As his knowledge grew and he matured, Ravi decided to work on *Euglena*, an alga familiar to many of us, that is both photosynthetic and heterotrophic and which shows swimming behavior that responds to light. Ravi designed an elaborate and time-consuming set of experiments in which the *Euglena* swam through mazes he built from various materials with light sources at the ends of the channels. His acumen in building the materials, planning the observations, collecting the data, and using statistics to analyze the data was extremely impressive. He presented a poster at several national research conferences on algae, including PSA, and received a special award and membership in PSA.

These accomplishments were the precursors for a multi-year project that has occupied Ravi for the last few years. His project title for the Regeneron Science Talent Search was "*Volvox barberi* flocks, forming near-optimal, two-dimensional, polydisperse lattice packings." It involves mathematical modeling and behavior observation of *Volvox* colonies in culture.

Ravi's research truly blossomed when he began this work on *Volvox*, a multicellular swimming colony of green algal cells. Consisting of thousands of individual photosynthetic cells, each with two flagella, the colonies are responsive to light and, as Ravi has found, each other. *Volvox barberi* colonies are essentially Bucky-balls of cells connected by strands of glycoproteins, spinning through a watery habitat. From these humble beginnings, *Volvox* has become a model for the evolution of multicellularity and is the subject of a biannual international meeting on all aspects of its evolution, genetics, and behavior. With support and cultures from Dr. James Umen at the Donald Danforth Plant Science Center in St. Louis, Ravi did his research modeling the group behavior of the *Volvox barberi* colonies that won him recognition by Regeneron. This work, presented as an oral paper at the Fourth International *Volvox* Conference in 2017 in St. Louis, is under review in a physics journal, and Ravi is planning a manuscript for the *Journal of Phycology* on swimming behavior by the colonial green algae. Ravi's presentation at the conference in St. Louis led *Volvox* researcher Matthew Herron to [blog about his work](#), marveling at the idea of a high school student doing such high caliber research.

Ravi has been accepted for admission to Yale University and has applied to MIT as well. So, congratulations to Ravi, and we hope he continues in his scientific endeavors and keeps up his interests in algae.

What Phycologists Need to Know About the Nagoya Protocol

Charles F. Delwiche

Professor, Cell Biology and Molecular Genetics, University of Maryland

I was asked in 2017 to represent the PSA at a workshop on the Nagoya Protocol sponsored by the Ecological Society of America and funded by the National Science Foundation, with a goal of carrying what I learned back to the PSA. The Nagoya Protocol is driving a major change in the rules governing the international transport of biological specimens, and the consequences of not being informed on the new situation are potentially large. Individual and institutional reputations could be badly damaged, and in some cases individuals lacking proper permitting or documentation could face jail time or the wrong end of a bayonet. It will pay off to spend a little time trying to understand the Protocol.

The Nagoya Protocol is a legally binding international treaty governing the exchange of genetic materials and resources, as well as the use of indigenous knowledge of those resources. In this context genetic materials means essentially any biological materials or sequences from them. To understand what the Nagoya Protocol is all about, it is necessary to recall that throughout human history there has been competition for natural resources, and that such competition has lain at the base of many major conflicts. Biological resources are no exception, and have the special property that a valuable biological material can potentially be grown profitably far from its place of origin. From the export of silk-moth larvae from China by the Byzantine Emperor Justinian in the sixth century to the unauthorized removal of rubber seeds from Brazil by Henry Wickham in the 19th century, illegal international transport of biological specimens has had significant economic impacts and spawned major conflicts. More recently, the Indian government successfully challenged a 1995 patent for neem tree oil filed by the USDA and WR Grace.

To address the rights of persons and nations regarding their biological heritage, in 1962 the United Nations established “permanent sovereignty over natural resources,” a principle that was codified by the 1992 Convention on Biological Diversity (CBD). The US signed the CBD, but never ratified it; instead it is an observer nation, meaning it cannot vote or negotiate terms. The CBD covers conservation of biological diversity, sustainable development, and *fair and equitable sharing* of benefits. Effective October 4, 2014, the Nagoya Protocol established a set of procedures intended to ensure the intents of the CBD. Nagoya does not give governments any rights they did not already have, but states a requirement to establish a clear process, have a domestic regulatory regime covering *mutually agreed terms* for access and benefit sharing, and to establish mechanisms to show compliance. Neither the United States of America nor Canada is currently a signatory to the Nagoya protocol, but unfortunately that does not mean that it is safe to ignore it.

In practice what this means is a second process that largely runs in parallel to the standard permitting process. What is critically important is that the intended uses and provision for benefit sharing must be negotiated and approved prior to collecting specimens. Note also that the Protocol covers not only biological materials, but also local knowledge about them. Furthermore, material collected under approval for one use may not be applied to a different use without new approval. The key elements to this approval are a *national permit* (a collecting permit), and an *internationally recognized certificate of compliance* (IRCC), which will be hosted archivally in the Access and Benefit Sharing Clearinghouse (ABSCH). The IRCC must be obtained prior to collection and transport. More information on the Convention on Biological Diversity, including a link to the ABSCH is available at <http://www.cbd.int>

Participating in benefit sharing need not be onerous. The goal is mutual benefit to both supplier and user, and can include both monetary and non-monetary benefits. Non-monetary benefits can include things that many of us already do when collecting internationally, including giving talks at local universities, training local students, participating in other aspects of education and training, forming research partnerships, helping build local research capacity and infrastructure, and many other things. I once carried a surplus microscope from the University of Maryland to local hosts at the National Herbarium in the Dominican Republic, transforming a scope that was gathering dust in a corner into one that was in active research use.

While the intent of the CBD and the Nagoya Protocol may be good, the implementation is imperfect. Each nation should have a *focal point*, an individual designated to serve as the point of contact for ABS and permitting questions, designated on the ABSCH website. In practice these individuals may or may not be responsive, and the process of obtaining the requisite documentation can be cumbersome. Your experience will vary widely depending upon the nation in question. **However, you must do your best to get that IRCC.** In practice, it is important to start early, and to carefully document your efforts to comply with the requirements of the Nagoya Protocol. Ideally you should have an Internationally Recognized Certificate of Compliance documented on the ABSCH website before you do any collecting, and 1192 entities have succeeded in doing so. If you can obtain a collecting permit but have difficulty establishing an IRCC, be sure to keep detailed records of your attempts to obtain these. It could literally avoid jail time for you (or your students).

At present international waters are not covered by the Nagoya Protocol, but negotiations are currently under way to determine how specimens collected in international waters will be handled. I strongly recommend that PSA remain engaged in tracking the negotiations, and collaborate with other professional societies on ensuring that whatever regulations are put into place are workable in a real-world context.

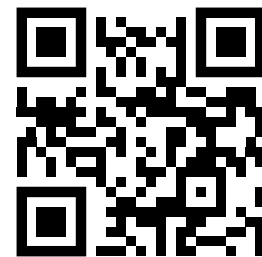


Figure 1: PSA has contributed to <http://learnnagoya.com>, a resource an information website intended to help scientists understand and navigate the requirements of the Nagoya Protocol.

WANTED: WEB-SAVVY VOLUNTEERS TO HELP THE PSA!

The Psychological Society of America is looking for two members in good standing who would like to help us get out the good news about algae on the Internet. Specifically, we are looking to recruit a **Webmaster** and a **Social Media Liaison**.

Webmaster Duties:

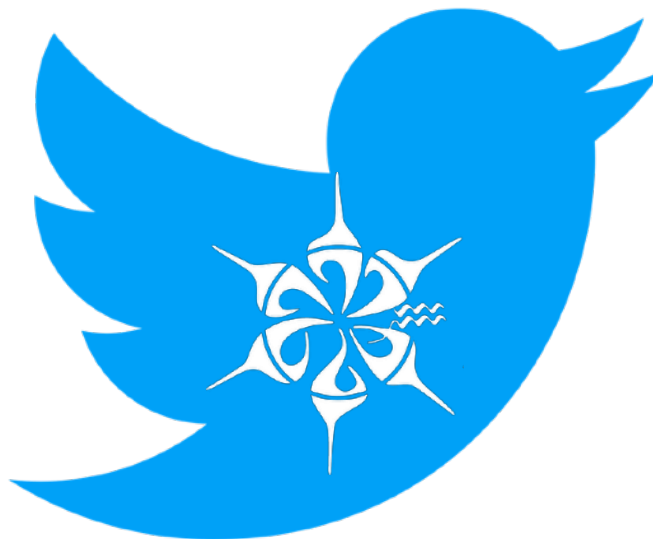
- Make changes as needed to the PSA website
- Contact PSA committee chairs to conduct semiannual reviews of different sections of the website
- Work with Program Committee to advertise the PSA Annual Meeting

Social Media Liaison Duties:

- Queue weekly content for the PSA Twitter feed
- Advertise PSA activities, deadlines, and funding opportunities via Twitter and Facebook
- Live-tweet talks during the PSA annual meeting (and/or other psychology meetings)
- Work with Program Committee to advertise the PSA Annual Meeting

Both the Webmaster and the Social Media Liaison will receive a **\$500 travel award** each year of service to attend the PSA annual meeting or another research conference of their choosing.

If you are interested — or if you have qualified colleagues or students — please contact the PSA Communications Director Jeff Morris (evolve@uab.edu).



News from the PSA Board of Trustees

Hello PSA members,

Happy 2020! I would like to start by thanking **Chuck Amsler** for his 5 years of service to the BOT. It was a pleasure working with him. I would also like to welcome **Paul Gabrielson** to the BOT. I am pleased he agreed to serve a 5-year term. He brings to the BOT his knowledge of and dedication to this society.

I hope everyone has **the annual meeting** marked on your calendars – **June 14-18 in Providence Rhode Island**. As is our tradition, we will have a headquarters room with books, reprints and other small items for sale (already have a nice stockpile of different PSA swag). We will again have a **LIVE(LY) AUCTION**. If you were not there last year, we had an absolutely great time and raised over \$2600 for the endowment that supports our grant programs. So, please be sure to bring items for auction and your wallets for buying again this year. See photo of some of the great things I have tucked away for the auction this year.

In case you missed it last year, here are a few highlights from the BOT work in 2019. We will again meet before the annual meeting this year and I will have a full report in the Fall Newsletter.



- ◆ **PSA Endowment** – The endowment remains in good fiscal health. Last year, the BOT recommended to the EC that we increase the support for Hoshaw Travel awards by \$6,000 starting this year for a total of \$18,000 available in 2020 and beyond. The BOT recognizes that student attendees and their presentation of their research not only enriches the meeting in the present year, but also students' involvement is key to the long-term success of the society. As well, 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 and I am pleased to note that all three Fellows plan to attend the RI meeting.
- ◆ **AlgaeBase** – The PSA leadership continues to work with Mike Guiry to strategize about future plans for sustaining this critical resource for the algal community.
- ◆ **Legacy Society/Planned Giving** – BOT member Michelle Wood along with Rick McCourt have been working to make giving to PSA easier and more visible including changes to our website along with other initiatives.
- ◆ Please feel free to email me about any questions/concerns you might have – vischia@ohio.edu.

**Cheers,
Morgan Vis
Chair, BOT**

PSA Membership

Happy New Year from the Membership Director!

If you were a member in 2019, you should have received an electronic renewal notification from Wiley. If you did not, simply head to [the PSA website](#) to renew your membership. I can supply your account reference number if you do not have record of it. It is never too late to renew but do so soon so as not to miss receiving the latest issue of Journal of Phycology! If you have any trouble renewing do not hesitate to contact your kindly Membership Director (mamsler@uab.edu).

PSA rang in the New Year with **759 members representing 43 countries**. During 2019 the Society welcomed **110 new members**. Forty-eight of the new members are students and will enjoy the second and third years of membership at no additional cost. Another three new members are in the Teacher/Pupil category which now enjoys the same student privilege of three years for the price of one. Spread the word on this great deal and cheers to the next generation of PSA phycologists!

As a reminder of your membership benefits:

- All PSA members receive the Journal of Phycology six times a year. Members can access the Journal using the Wiley Online Library. Login information is sent after joining or renewing a membership. If you experience any problems accessing the journal contact cs-membership@wiley.com for assistance.
- PSA members can obtain full-text electronic papers from all back issues of the Journal.
- PSA members are NOT charged page fees when they publish in the Journal of Phycology as communicating authors.
- Members can access the Journal of Phycology through an iPad and iPhone app. Instructions for access are available at the PSA website.
- Members receive a PDF copy of the Phycological Newsletter or they can download it from our website. The Newsletter includes upcoming Society activities, colleague highlights, book reviews, information on summer field courses and graduate programs, algal history retrospectives, general articles of interest and much more.
- Members receive a discount on annual meeting registration fees.
- Postdoctoral and student members of PSA are eligible for grants in support of research.
- Postdocs and early career members are eligible to apply for the Norma J. Lang Fellowship.
- Student members are eligible for grants in support of research, travel to the Annual Meeting, and tuition for field courses.

Finally, and most importantly, the greatest benefit of being associated with the Phycological Society of America is membership in a vibrant, algal-embracing community. Please continue to contribute your vitality and algal zeal by keeping your membership up to date!

See you all this summer in Providence, Rhode Island for the 74th Annual PSA Meeting!

**Wishing you an algae-filled 2020,
Maggie Amsler, PSA Membership Director**

Citizen Science Meets Diatoms

The Alverson lab at the University of Arkansas has launched a citizen science project, *myDiatoms*, designed to increase public awareness of "hidden" microbial diversity. Participants identify a local water body, request a free sampling kit, and follow simple tutorials on how to collect a diatom sample. After the sample is processed, a project page describing their chosen water body and featuring an image gallery of the diatoms they collected will be posted to the *myDiatoms* website. Links to taxon pages at the [Diatoms of North America website](#) allow participants to see SEM images and learn more about the biology and ecology of species in their water body.

The project is primarily targeted to K–12 aged students, classrooms, and school groups, but any interested member of the public is encouraged to participate. Interested participants can visit the *myDiatoms* website (<https://www.mydiatoms.org/>) to learn more about the project, request a free sampling kit, and view example project pages.

The *myDiatoms* project is supported by a grant from the National Science Foundation.



Upcoming PSA Awards & Grants

PSA Research Grants

The **Hannah T. Croasdale Fellowships** are designed to encourage graduate students to broaden their phycological training by defraying the costs of attending phycology courses at biological **field stations**. The purpose of the award is to broaden phycological training and not necessarily to further research goals. Proposals to study at field stations associated with universities other than the student's own are especially encouraged. Awards are made directly to the student in amounts up to \$1,500 each. Completed application should be sent to Sophie McCoy (mccoy@bio.fsu.edu) by March 2nd.

The **Hoshaw Travel Awards** are to help students with their travel expenses to the annual PSA meeting. All other factors equivalent, students who will present their research at the meeting (lecture or poster) will be given priority, with a mean award size of approximately \$500. The deadline for the completed application will be announced concurrent with abstract submission for the 2020 PSA Meeting. Successful applicants will be notified prior to the meeting and the awards will be presented at the meeting. For further information, please contact: Sophie McCoy (mccoy@bio.fsu.edu).

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

PSA accepts donations through Paypal.

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

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

PSA Award of Excellence

Nominations for the PSA Award of Excellence are being accepted through **February 20, 2020**. Please see specific information about submitting a nomination at <https://www.psaalgae.org/award-of-excellence/>, which is reprinted below.

The PSA Award of Excellence honors scientists for a record of sustained scholarly activity, including teaching and service, who have had a major impact on the field of phycology. The Award is a career achievement award for a living phycologist.

Recipients of the Award of Excellence will be chosen on the basis of their sustained scholarly contributions in, and impact on, the field of phycology, through a distinguished record of scholarly activity. Nominations will be welcomed for all fields of research on algae and also should highlight the candidate's service to PSA and/or other phycological societies. The Award is a career achievement award for a living phycologist. Membership in the PSA is not a requirement for nomination.

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 for nominees who were not selected will automatically be reconsidered this year. Updates to nomination packages submitted last year 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 last year 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 also should highlight the candidate's service to PSA and/or other phycological societies. Inquires and/or electronic nomination materials should be directed to Rick Zechman, Humboldt State University. All nomination materials should be electronic files submitted by email to rick.zechman@humboldt.edu.

In order to receive full consideration for the award that will be made at this year's PSA annual meeting, the complete nomination package must be received by February 20, 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.

I look forward to receiving your nominating materials.

**Best regards,
Rick Zechman**

Bold and Lewin Awards

Attention PSA Undergraduate and Graduate Students!

We would like to remind everyone about the prestigious Bold (oral presentation) and Lewin (poster presentation) Student Awards for the upcoming PSA meeting, and encourage all qualifying students to apply! To sign up, students must:

1. Register online for either the Bold or Lewin awards when you register your abstract for the meeting (select the Bold/Lewin Symposium option in the drop-down menu)

2. Submit a letter of support from your advisor to the Student Awards Committee Chair (spaldinghl@cofc.edu) by the PSA registration deadline.

A key advantage of the Bold Award is the undivided attention of the entire PSA meeting – this is the best opportunity to present your research to the entire psychological community at the beginning of the meeting, and establish your stellar career (or you can do it for the monetary award...perfectly acceptable). It's the an excellent networking opportunity for your next graduate experience, post-doc, or job.

The Lewin poster competition is your chance to shine in a student-friendly environment. Lewin poster participation has ranged from only 2 – 5 students over the past few years, so now is your chance to compete while the odds are in your favor.

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

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

Contact PSA Student Awards Committee Chair, Heather Spalding (spaldinghl@cofc.edu) with any questions. See you in Rhode Island!

Meetings and Workshops

NEAS 2020

The **59th Northeast Algal Symposium** will be held **April 17th-19th in Burlington, VT**. This year's meeting will be freshwater-themed but all algae enthusiasts are welcome of course! Additional information will be available soon at the Northeast Algal Society website, <http://northeastalgae.org/>. For updates follow @NEAS_algae and #NEAS2020 on Twitter, or check <https://www.facebook.com/northeastalgalsociety>. We hope to see you in Vermont!



Phycology Summer Course Hatfield Marine Station, Newport, Oregon.

The Hatfield Marine Station of Oregon State University will offer a course in Phycology (BOT 417X/517X) this summer (**July 20 – August 14 2020**, summer term II). This upper level undergraduate and graduate level course is a field and laboratory based introduction to micro- and macro-algal biology, reproduction and evolution. Emphasis is placed on how the endosymbiosis theory ties algae together as a functional group. Algal diversity will be explored through lectures, laboratory and field trips. The laboratory experience will include methods for isolation, culturing and maintenance of algae for aquaculture and research. Registration begins **April 12, 2020**. <https://summer.oregonstate.edu/registration>.

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Freshwater Algae Identification 2020

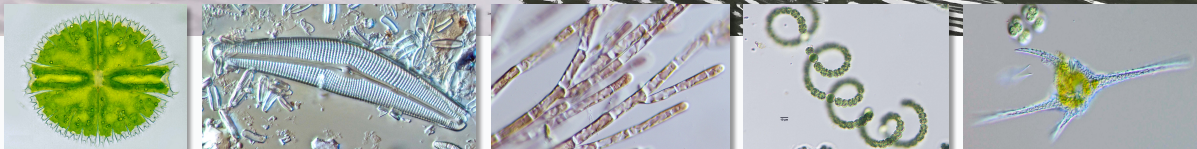
A Field Course at Fordham University: June 19 - July 2, 2020

NOTE: Immediately AFTER PSA Annual Meeting!



**At the Louis Calder Center – Biological Field Station
Fordham University, Armonk, New York**

A field course on the shore of Calder Lake, studying algae from diverse freshwater habitats



- Gain proficiency using modern taxonomic keys. Taxonomic library provided.
- Learn the diagnostic features used to identify members of the major algal groups.
- Create an image database of high-resolution algal images and voucher specimens.
- See some of our past collections: <https://www.fwa-biodiversity.org/algae-of-calder-lake>

Costs and Registration

- Registration Fee: \$1,800. Cost includes on-site housing (limited number). Meals not provided
- Transportation costs to and from the Calder Center not included.

Register at: www.fordham.edu/FWalgaeID

More information, contact: John Wehr (wehr@fordham.edu) or Alissa Perrone (aperrone@fordham.edu)



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)

Application Deadline: 1 March 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 phycology course at a biological field station, visit:

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

BOOK TITLES

The Curious World of Seaweed

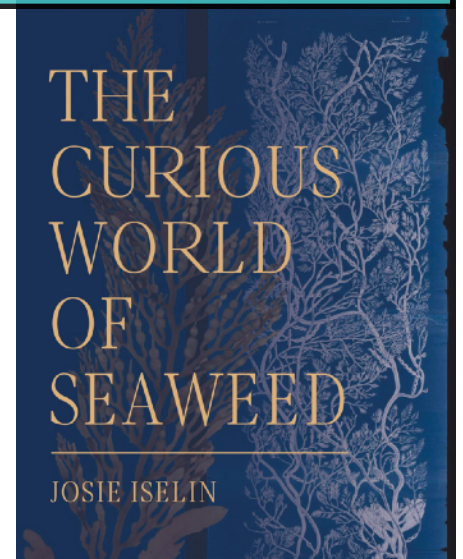
by Josie Iselin

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/>



“I love seaweed because it is gaspingly beautiful” — Josie Iselin, quoted in SF Chronicle



*“Seaweed is literally the roots of our ocean. For three generations, our family has thought how we could make a quality film documentary about the importance of seaweed in the ocean ecosystem. We could never translate it to film. But Josie Iselin, with a remarkable mixture of photos and writing in *The Curious World of Seaweed* and her prior book, *An Ocean Garden*, has hit the mark. Scholarly but fascinating, she reveals the forests that maintain our ocean. She can take a bow from me and our legacy for an important work well done.”*

Fabien Cousteau, ocean explorer, documentary filmmaker and eldest grandson of Jacques Cousteau

**Adil Y. Al-Handal; Maitham Al-Shaheen:
Diatoms in the wetlands of Southern Iraq**

2019. 252 pages, 652 figures, 62 plates, 1 map, 14x21cm

(Bibliotheca Diatomologica, Band 67)

ISBN 978-3-443-57058-3, paperback, 129.00 €

www.schweizerbart.de/9783443570583

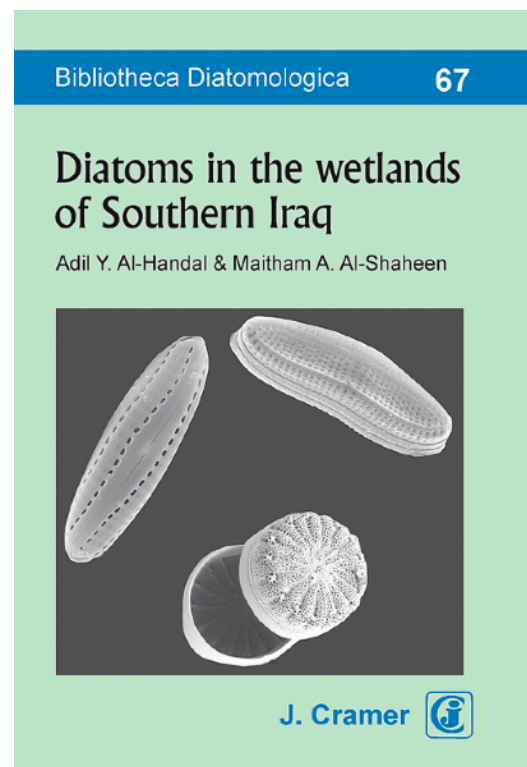
The authors document the diatom species composition and ecology in the two major water impoundments of Southern Iraq, the Mesopotamian Marshes and Shatt Al-Arab River. Based on light and scanning electron microscopy investigations, 293 taxa are documented, including the description of three new species. The taxa treated herein were collected from a variety of habitats over a period of 15 years. Diatom assemblages consist of a mixture of freshwater, brackish water and marine taxa. Many diatom taxa that have disappeared in recent years are also documented in this volume. One reason for their disappearance is the high salinization of the Mesopotamian Marshes and Shatt Al-Arab River areas resulting from extremely low freshwater discharge from Euphrates and Tigris Rivers which allowed the seawater front to reach these regions. Species belonging to previously recorded genera such as *Eunotia* and *Diatoma* are no longer present in this area.

Therefore, this work also is a documentary record of the diatom flora of the wetlands of Southern Iraq during the past 15 years and not only provides an insight into the present state of research but preserves records and findings from taxa no longer present in Southern Iraq, due to human driven ecological impacts.

Order information:

www.schweizerbart.de

order@schweizerbart.de

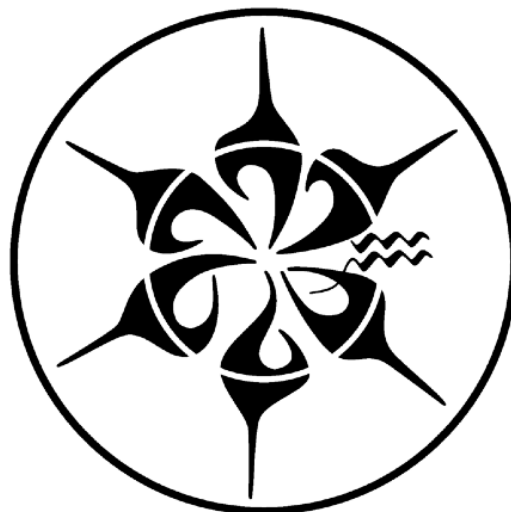


Open Education Resource

Northeast Algal Society Phycology Lab Manual

The Northeast Algal Society has created the first edition of an online phycology lab manual now available in open-access form. Following initiatives by NEAS Members Dr. Brian Wysor and Dr. Elizabeth Lacey, NEAS experts were asked to submit chapters on a variety of topics, which include exercises in Bioinformatics, Phylogeny Building, Reproductive Ecology, among others. These submissions were evaluated within multiple University undergraduate phycology or marine botany courses and organized into an online repository available at e-neas.org (under 'Library' tab). Each chapter is offered as a separate download with a suggested \$20/ chapter one time donation to NEAS. As this resource grows, NEAS hopes it can become a resource for educators throughout the country as they remain current on emerging techniques and practices necessary for students and practitioners in phycology. We ask that anyone using the resources properly attribute credit using the citation style presented on the website.

Templates are available for anyone interested in submitting additional chapters (open to anyone - not just NEAS!). Questions or issues using the chapters, please contact the editor: Dr. Elizabeth Lacey, Associate Professor of Marine Science at Stockton University (Elizabeth.Lacey@stockton.edu). For questions on specific chapters, please contact the contributing author (given with each chapter).



EMPLOYMENT

POSTDOCTORAL OPENINGS at THE UNIVERSITY OF GOTHENBURG

Two postdoctoral positions are available at the University of Gothenburg Marine Sciences Department. Applicants should have a background in phycology, microbiology, molecular biology, analytical chemistry, bioengineering, cell biology or related disciplines. The first postdoc position focuses on microbial and bacterial relationships in biofloc/biofilms within Recirculating Aquaculture Systems (RAS). The other positions focuses on an examination of anaerobic digesters and hydroponics units with the goal of better understanding conditions that will maximize beneficial transfers of microbes and their products among components of decoupled aquaponics / algaeponics systems.



We're looking for dynamic, independent researchers with excellent English communication skills who would enjoy the opportunity to work collaboratively on an international project that will require regular travel (primarily Australia, EU, Southeast Asia and the US). Two-year renewable contract with competitive salary and benefits. Deadline January 31, 2020 for start date in May 2020. For further information contact Dr. Alyssa Joyce: alyssa.joyce@gu.se or apply here:

Postdoc position 1: https://www.gu.se/english/about_the_university/job-opportunities/vacancies-details/?id=4943

Postdoc position 2: https://www.gu.se/english/about_the_university/job-opportunities/vacancies-details/?id=4942

PhD Position in Phytoplankton Competition and Cooperation

[The Morris Lab at the University of Alabama at Birmingham](#) is funded to study the ways that open ocean phytoplankton interact with each other, and with the heterotrophic bacteria they share their habitat with. Classical ecology has wondered about the forces that allow so many different kinds of phytoplankton to coexist in the same place and the same time, despite the fact that they are ostensibly competing over the same small pool of limiting nutrients. Recent experiments we have done using the key phytoplankton genera *Prochlorococcus* and *Synechococcus* suggest that some of these supposed competitors also "help" each other in poorly characterized ways. Because strains of these two cyanobacterial genera are among the most abundant carbon-fixing organisms on Earth, these potentially synergistic interactions might be hugely important for Earth's carbon cycle, and for our ability to predict the ocean's future in the face of human-caused environmental change.

We hope to recruit one or two PhD students to investigate the interspecies interactions between various strains of *Prochlorococcus* and *Synechococcus* across environmental gradients of temperature and pH that represent our best models of the future ocean. Students will use traditional culture work as well as molecular and genomic tools to discover how these organisms compete and cooperate. Students will also work with mathematical models to translate laboratory findings into refined predictions about the ocean's future.

The University of Alabama at Birmingham is a modern urban campus located in the heart of vibrant Birmingham, Alabama. UAB is one of the premier public medical schools in the US, and as a consequence basic research labs like ours have access to state-of-the-art facilities in terms of next generation sequencing, microscopy, mass spectrometry, and so forth. Moreover, Alabama is a nexus for biotechnology, yielding many opportunities for networking and career advancement both in academic science and in private and public sector PhD-level employment. Our research group is also heavily invested in education reform at UAB and beyond, and doctoral students will gain valuable experience in cutting-edge teaching and biology education research that will serve them well on the academic job market later in their career.

MorrisLab is committed to providing a welcoming environment for all talented and curious people, regardless of sex, race or ethnicity, sexual orientation, age, religion, family status, or political affiliation. We seek to foster a climate of free thought, open inquiry, and professional collegiality both in the lab and in the broader research community. Competitive applicants will have research experience in microbiology, molecular biology, or a related field, and at least one superior reference letter from a research mentor, in addition to meeting the GRE and GPA requirements for graduate study in the UAB Biology department. Prospective applicants should send a letter of introduction and a CV to Dr. Morris at evolve@uab.edu.



**Submit your contributions to the next
Phycological Newsletter by August 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