
PHYCOLOGICAL NEWSLETTER

MESSAGE FROM THE PRESIDENT



PSA President Tim Nelson

It has been an exciting year for the Phycological Society of America! The diversity of research that I love about PSA was on full display at our 71st annual meeting near the beautiful beaches of Monterey. I hope that the breadth of presentations, from AlgaeBase and macroalgal bloom ecology to the unusual non-aquatic algae, and from the past of fossil algae to the present and future of a changing ocean, engaged you as they did me.

This year has been marked by our partnerships with other scientific organizations. Our long relationship with CASS (Consortium of Aquatic Science Societies) continues to flourish, as CASS grows with the addition of new partner societies. PSA has partnered with CASS on several letters encouraging the new administration in the United States to follow sound science when making various decisions and supporting funding for scientific research. We are now beginning planning for a 2022 meeting with CASS. We have also partnered with the March for Science on similar goals.

This year also marks the inauguration of our Lang Fellowship. Please congratulate Dr. Holly Moeller of the University of California at Santa Barbara, our first Lang Fellow, who has proposed a thoughtful plan to study secondary endosymbiosis using *Mesodinium* that has excellent long-term potential. In this newsletter you can read more about Dr. Moeller and her work.

The work of PSA would not be possible without the many dedicated volunteers who serve as officers and on committees. Please join me in thanking several of our capable officers who have fulfilled their terms at the end of this year. Past-President Paul Gabrielson has ably led the Society, helping us toward a stronger relationship with AlgaeBase in particular. Mariana Cabral



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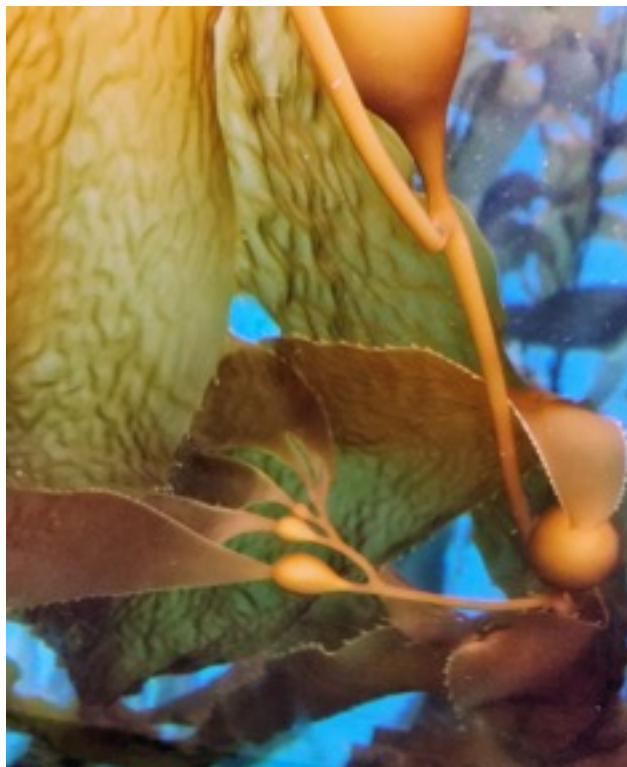
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de Oliveira has completed her term as International Vice President, advising on the interests of members outside North America in particular. Similarly, Emily Johnston has adeptly represented the students on the Executive Committee, most recently starting our new listserver for student members. Dale Casamatta, our long-serving Program Director, is stepping down after 7 years of outstanding service. Chris Lane will be leaving his role as Secretary, after ably leading our first awarding of the Lang Fellowship. Rick McCourt is stepping down as Chair of the Board of Trustees, a role he was thrust into unexpectedly, after leading the Board in several new initiatives that have placed the Society on firm footing for the future. Thanks are also do to those who chair and serve on the many committees necessary for the operation of the Society.

Please join me in welcoming our newly elected officers. Kirsten Müller will serve as Vice President/President-elect, Joe Zuccarello will be our International Vice President, Arley Muth joins us as the Student Representative, Amy Carlile as Program Director, Patrick Martone as Secretary, and Morgan Vis as Chair of the Board of Trustees.

In closing, as the year draws to an end, I thank you all for the opportunity to serve as the PSA President.



PSA NAMES FIRST NORMA J. LANG FELLOW: DR. HOLLY V. MOELLER

The Phycological Society of America is excited to announce that the first-ever Norma J. Lang Fellowship has been awarded to Dr. Holly V. Moeller of UC Santa Barbara. Dr. Moeller is a community ecologist who studies how interactions between species affect the structure and function of Earth's ecosystems. She is particularly interested in acquired metabolism—metabolic capabilities that, rather than being encoded within an organism's DNA, are instead obtained within an organism's lifetime from other species (e.g., plastid acquisition via kleptoplasty). Her work has spanned marine and terrestrial systems and taken her across continents and oceans in pursuit of diverse study systems.



As an undergraduate at Rutgers University, Dr. Moeller conducted research in the laboratory of Paul Falkowski, exploring the photoacclimation ability of the kleptoplastidic marine ciliate *Mesodinium rubrum*. Her Masters thesis on fisheries bioeconomics, supervised by Dr. Michael G. Neubert of Woods Hole Oceanographic Institution (WHOI), allowed her to branch out into mathematical ecology and optimal control theory, which she later applied to a study of tree-fungal mutualisms as a Ph.D. student with Dr. Tadashi Fukami at Stanford. Prior to joining the UCSB faculty, Dr. Moeller was an NSF Math-Biology postdoctoral fellowship to work with Dr. Neubert and Dr. Matthew D. Johnson at WHOI to use both mathematical theory and experimentation to study the effects of acquired metabolism on planktonic community structure and function.

The Moeller Lab at U.C. Santa Barbara conducts research in both terrestrial and aquatic systems, building upon Dr. Moeller's experience with kleptoplasty and tree-fungal mutualisms. As a Lang Fellow, Dr. Moeller will work to develop the *Mesodinium* genus into a model system for the evolution of eukaryotic

phytoplankton through kleptoplasty. In addition to the almost entirely phototrophic *M. rubrum*, the genus includes the mixotrophic *M. chamaeleon* and the entirely heterotrophic *M. pulex*. The Phycological Society of America's Norma J. Lang

Fellowship has provided \$9,827 of funding for the Moeller Lab to explore competition and coexistence between *Mesodinium* species by quantifying each species' physiological and behavioral niche through measurements of prey specificity, growth, carbon budget, and swimming activity.

As a Lang Fellow, Dr. Moeller will work to develop the Mesodinium genus into a model system for the evolution of eukaryotic phytoplankton through kleptoplasty.

In addition to her scientific work, Dr. Moeller is deeply committed to science communication. In this era of global change, it is more critical than ever that the voting public understand core scientific concepts. To this end, Dr. Moeller has written scientific columns and opinion pieces for various newspapers, gives public lectures, and currently serves as a science fellow of the National Network for Ocean and Climate Change Interpretation. She also strives to communicate the value of mathematics to biology, emphasizing the importance of quantitative approaches to ecology and evolution, and using biological problems to help students engage with mathematical concepts.

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>

Artist/Author Josie Iselin Wins the 2017 L.H. Tiffany Award for *An Ocean Garden*

Please join us in congratulating the 2017 PSA L.H. Tiffany Award recipient, Josie Iselin, for her book entitled, *An Ocean Garden, the Secret Life of Seaweed*.

Josie's book has garnered attention and praise from the New York Times, claiming that she found beauty in "homely seaweed"! Below are excerpts from the nominations:

"Aided by professional phycologists, the author's presentation of the science is solid, and the illustrations of living seaweeds produced by digital scanning techniques provides a unique and new view of marine algae that is both scientifically accurate and aesthetically striking. Clearly a labor of love, the book brings seaweed illustration into the digital age."

"A friend of mine who is not a scientist read about Josie's book in the New York Times and bought it for me and then bought one for herself! I think that book has the ability to reach a broad, non-phycologist audience... We all know how beautiful algae can be, but I really feel like her book shows this to people."

Josie attended the annual meeting in Monterey to instruct a class on using algae in art and to talk about communicating science to a general audience. We thank her for her wonderful contributions to phycology!



Josie Iselin, artist, author, and recipient of the 2017 Tiffany Award.



The winning book, *An Ocean Garden*

THE 2017 PSA AWARDS OF EXCELLENCE

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 PSA Award of Excellence Committee had the difficult task to select among extraordinary nominees for the current year. This year was not different given the outstanding nominations but the committee felt very strongly that both of our selections for this year's Award of Excellence are well-deserving individuals that have made a profound effect on the science of Phycology and an indelible record of education and service for the phycological community. CONGRATULATIONS TO OUR 2017 AWARDEES, **Dr. Debashish Bhattacharya** and **Dr. Susan Kilham**!

Dr. Debashish Bhattacharya is a Distinguished Professor in the Department of Ecology, Evolution and Natural Resources at Rutgers University and also the founder and scientific head of the Rutgers Genome Cooperative since 2010. As was highlighted by his nomination and supporting letters, Debashish has been increasing our knowledge in different areas not only in phycology but in general biology as well. He is well-



known for his research on “deep time” evolution and the origin of eukaryotes, reconstruction of the evolutionary history of the plastid in photosynthetic organisms, endosymbiosis and horizontal gene transfer, the ability of genomes to adapt to changing environmental conditions, and biomineralization in corals and their dinoflagellate symbionts. Debashish has published well over 200 scientific papers in highly considered journals. I found his work on secondary and tertiary chloroplast endosymbiosis, and on the ancient origin of dinoflagellate mixotrophy, particularly interesting and significant. Professor Bhattacharya's scientific contribution has been very highly cited in comparison with other workers at his career stage and in his research area. Debashish has also edited books on “Genome evolution in eukaryotic microbes” and “Origins of algae and their plastids” and he has been extensively invited to give plenary lectures worldwide. During his phycological service, Debashish has been a mentor to many undergraduates, graduates and postdoctoral researchers such as Jefferson Gross, Jeremiah Hackett, Ahmed Moustafa, Michael Peglar, Huan Qiu, Valerie Reeb, Adrian Reyes-Prieto, Hwan Su Yoon and many others. More recently in 2012 he joined as Co-Editor for the Journal of Phycology and the results of his and editorial work have been highly successful in terms of impact and quality.

Dr. Susan Soltau Kilham is a Professor of Environmental Sciences at Drexel University and has a highly distinguished career in phycolgical research, education and service. She has a career of more than 45 years and has been a standard-bearer for women in science and a mentor for numerous female scientists. The excellence of Dr. Kilham's investigations cannot be highlighted enough as one of her nomination letters states "Dr. Kilham is a preeminent researcher in algal ecology,



known as widely outside the phycolgical research community as she is inside of it. Her work on physiological ecology of diatoms in particular played a seminal role in the development of the ecological theory of resource allocation with Dr. David Tilman. Her research on the relationship of species coexistence to resource utilization was ground breaking and led to fundamental advances in community theory. It is particularly noteworthy that she and her co-workers realized that testing resource theory using algae would be significant in terms of the applicability of principles to aquatic ecosystems, and moreover, be generalizable to other systems". With ca. 100 publications in a wide variety of journals such as *Science*, *Ecology*, *Nature*, *Annual Review of Ecology and Systematics* and, of course, *Journal of Phycology*, to mention just a few, the excellence of her publication record speaks loudly about the rigorous scientific methods employed in her investigations. It is not a surprise that Dr. Kilham has been the recipient of numerous grants from the NSF, Smithsonian, NOAA, and other funding agencies. In addition to her outstanding research, Dr. Kilham has been described as a passionate and inspiring mentor with over 45 Masters and 20 PhD mentees as a major advisor along her educational career both at Drexel University and University of Michigan; "among these are included academics, and science administrators, environmental managers, holders of endowed professorships and chairs and a member of the National Academy of Sciences." Dr. Kilham has received many awards and honors such as the National Lecturer for The Phycological Society of America, the Sarah G. Power Award of the Academic Women's Caucus, The Dr. Susan S. Kilham Environmental Laboratory, dedicated to her in 2015, and the McArthur Alumnus Award, among others. During her professional service Dr. Kilham has served on the editorial board for *Limnology and Oceanography*, the Board of Directors of the International Society of Limnology, and has been a plenary speaker for the PSA. The contribution by Dr. Kilham to phycology has been tremendous and she has "taught us much about the diatoms themselves and helped to make algae significant to the broader research community."

**Juan Lopez-Bautista, Chair
The University of Alabama**

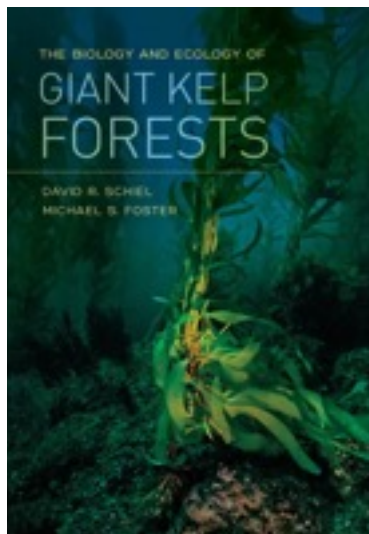


The Provasoli Award

for the year's best paper in the *Journal of Phycology* went to "**The evolution of silicon transporters in diatoms**" by Colleen Durkin (pictured), Julie Koester, Sara Bender, and E. Virginia Armbrust.

The Prescott Award

for the year's best book on phycology went to *The Biology and Ecology of Giant Kelp Forests* by David Schiel and Michael Foster (pictured).



BOLD and LEWIN AWARD WINNERS

In June 2017, at the annual PSA meeting in Monterey, California, seven students competed for the Harold C. Bold award for the best oral presentation. The top honor was awarded to **Kyra Janot** (Patrick Martone's lab) for her talk entitled "To build a coralline: the effect of morphology and materials on bending in convergent articulated corallines". Two students competed for the Ralph A. Lewin Award for the best poster presentation. The winner was **Sabrina Heiser** (Chuck Amsler's lab) for her poster entitled "Factors driving the production of defensive secondary metabolites in the Antarctic red seaweed *Plocamium cartilagineum*". Congratulations to these students and their mentors!



Pictured from left to right: Heather Spalding, Lewin Award winner Sabrina Heiser, Bold Award winner Kyra Janot, and Patrick Martone.

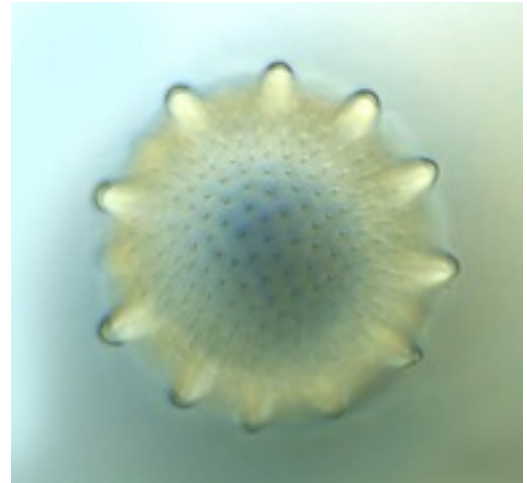


Information on all of these awards and fellowships can be found under the PSA Awards and grants tab at the PSA website:

<http://www.psaalgae.org>

How to win the Hilda Canter-Lund algal photography competition

The winner of the 2017 Hilda Canter-Lund photography competition is Chris Carter for his photograph of the desmid *Pleurotaenium coronatum* var. *robustum*. Chris' image is the first true micrograph to win the competition since 2011, when Lyra Gaysina won with an image of the cyanobacterium *Trichormus variabilis*. The lack of winning microscopic images in the intervening years was a reflection of a relatively small number of really good micrographs that were submitted (or, more accurately, the low number relative to the number of stunning images of macroalgae). This led to some soul-searching: could it be, we wondered, that taking a really good photograph of a microscopic alga was harder than taking a great macroalgal image? There are major technical and compositional challenges, not least of which is the shallow depth of field with which microscopists contend whereas some good images of larger algae taken on camera phones have been submitted to the competition.



Chris Carter: “Apical view of the desmid *Pleurotaenium coronatum* var. *robustum* West” (2017 winner)

The irony, of course, is that the competition was set up to honour a microscopist, Hilda Canter-Lund, whose stunning images (taken before the advent of digital photography) show both high technical skill and an eye for a great composition. A further irony came

when, in 2017, Chris Carter overturned our hypothesis by scoring the most votes in the first ballot to scoop the prize with yet another desmid image.

Chris' image was, in fact, the only true micrograph on the 2017 shortlist.

However, there were three microscopic images that very nearly made the cut. The tragedy is that a couple of minutes working with basic image controls (cropping and adjustments to levels and contrast) could have raised each of these images to shortlist standard. The message from this is, for microscopic images in particular, the raw image as captured represents a stage



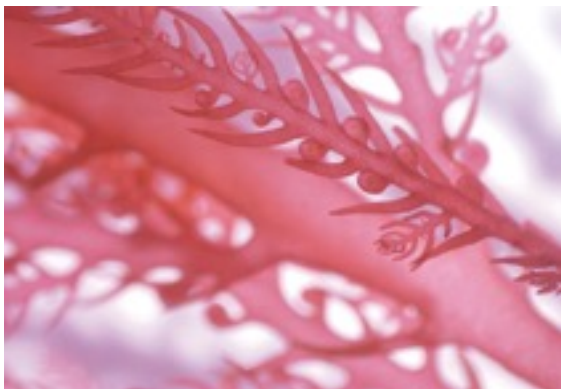
Lyra Gaysina: Blue-green necklace — *Trichormus variabilis* (2011 winner)

on the journey. Not only do the competition rules permit “basic image enhancement”, some judicious cropping and adjustments is probably essential.

So here are a few guidelines to produce a prize-winning microscopic image ready for the 2018 competition. The same principles apply just as much to taking good microscopic images for papers, theses and presentations.

1. Keep your microscope and camera in tip-top condition. Check the set-up regularly and make sure that there is no dust on the lenses. When a great image presents itself, you need to be ready to go. This is what the great French photographer Henri Cartier-Bresson referred to as the “decisive moment”.
2. Get a good photo editing package and learn how to use it. At the very least, you need to understand how to crop images, how to adjust levels and how to use filters to sharpen images. Adobe Photoshop is the market leader, but there are other, cheaper alternatives.
3. The biggest problem that the microscopist faces is the very limited depth of field which can lead to parts of the image being blurry and out of focus. The easiest way to overcome this is to use image stacking software such as Helicon Focus (again, other packages are available). This is fairly straightforward to use but you will need to experiment several times so that you understand it before being able to create your masterpiece. On the other hand, some blurriness can contribute to the mood of an image – as Tiff Stephen’s second prize winning image this year demonstrates.
4. Organise your files so that you can find images again. By all means use jpegs as a basic image format, but convert usable images to a more stable format such as *.tiff as soon as you can.

So here are a few guidelines to produce a prize-winning microscopic image...



**Tiffany Stephens: Cystocarp
Central (2017 2nd prize)**

The best advice I can give to anyone is to get hold of a copy of John Lund and Hilda Canter-Lund’s book “Freshwater Algae: Their Microscopic World Explored” (1996, Biopress or Balogh Books) which is profusely illustrated with Hilda Canter-Lund’s own images. She always managed to capture the quintessence of the organisms she was studying at the same time as producing technically impressive

images and aesthetically-pleasing compositions. Noticing the potential in an arrangement of cells or filaments is so important; having your equipment ready to capture these often ephemeral moments runs a close second. Judicious use of editing tools comes next and, finally, don't forget where you stashed your wonderful image amongst the plethora of folders on your hard drive, ready for the call for the 2018 competition.

Martyn Kelly

All winning and shortlisted images for the Hilda Canter-Lund competition can be seen at <http://www.brphycsoc.org/canter-lund/index.lasso>

You'll find more tips on the art of great algal photography on my blog:

<https://microscopesandmonsters.wordpress.com/2016/07/18/how-to-win-the-hilda-canter-lund-competition/>

<https://microscopesandmonsters.wordpress.com/2016/07/27/how-to-win-the-hilda-canter-lund-competition-2/>

<https://microscopesandmonsters.wordpress.com/2016/09/07/how-to-win-the-hilda-canter-lund-competition-3/>



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 Phycological Society Of America Inc. **Support us every time you shop — set your Amazon bookmark to [PSA's AmazonSmile link!](#)**

PSA ANNUAL MEETING

The 2017 Meeting of the Phycological Society of America took place from June 4 to June 8 at the Embassy Suites Monterey Bay in Seaside, California. Keynote speakers included Mike Guiry and Laura Rogers-Bennett, and symposia featured *Picophytoplankton in a Changing World*, *The Ecology of Macroalgal Blooms*, and *Non-aquatic Algae*. Attendees also enjoyed an energetic poster session, a convivial opening mixer, and a fascinating workshop on art and science from Tiffany Award winning author Josie Iselin. Thanks to local organizer Michael Graham and PSA program director Dale Casamatta, a wonderful time was had by all!



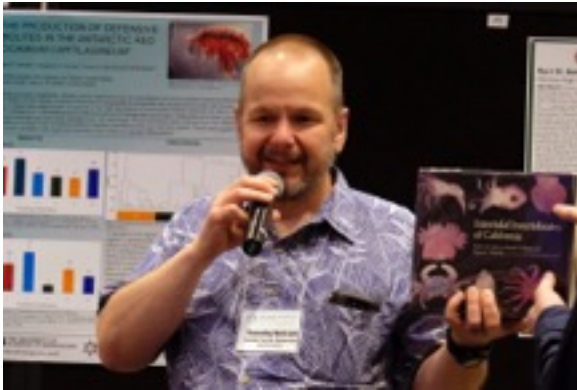
The meeting venue — it was a “work in progress” so to speak, but at least there was free beer in the afternoons.

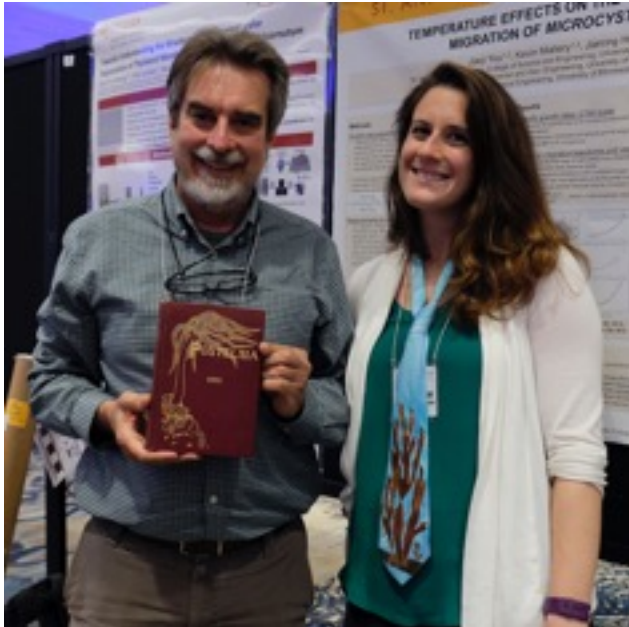
Fisherman’s Wharf near Monterey’s Cannery Row, made famous by John Steinbeck.



Many attendees got to enjoy the world-famous Monterey Bay Aquarium, including their amazing indoor Macrocyctis tank (see page 2).

ANNUAL PSA AUCTION

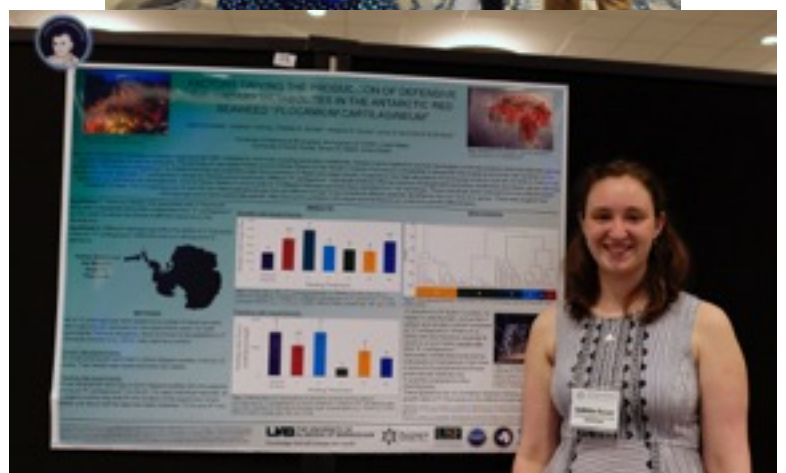
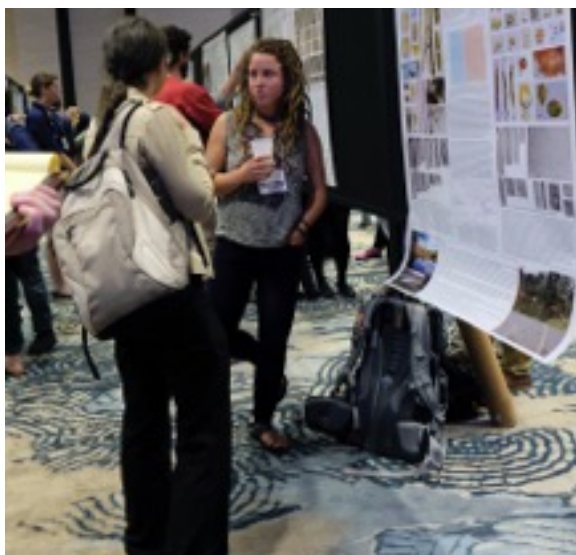
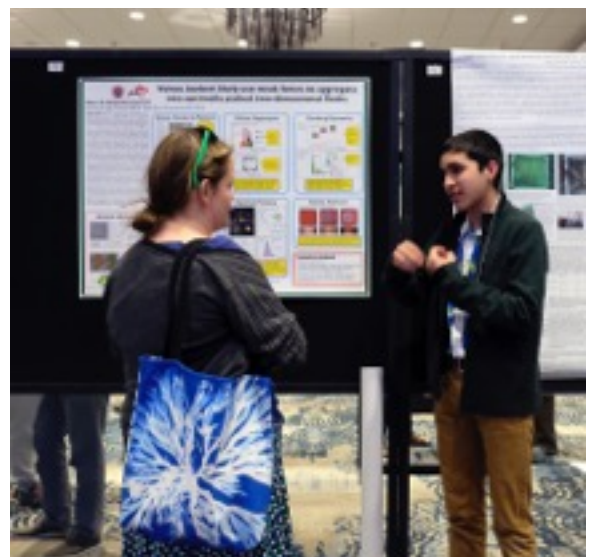
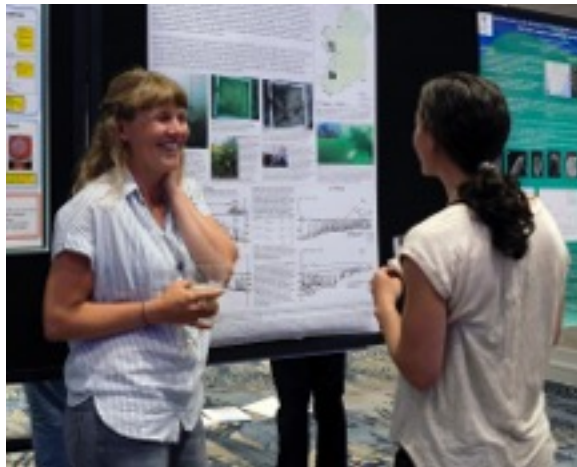




Paul Gabrielson and Carolyn Fisher show off the highest-ticket auction items at the 2017 PSA Auction.

Proceeds from the auction support student travel awards to the annual meeting and other grants and fellowships provided by the Society.

POSTER SESSION





Past PSA Presidents. Left to right: Paul Gabrielson, Larry Liddle, Morgan Vis, Rick McCourt, Sue Waaland, Bob Waaland, Chuck Amsler, Curt Pueschel, and current president Tim Nelson

Academic descendants of Mike Neushul. Left to right: Kate Schoenrock, Heather Fulton-Bennet, Stephan Bitterwolf, Sarah Jeffries, Mike Graham, Craig Aumack, Chuck Amsler, Mike Foster, Larry Liddle, Bill Henley, Sabrina Heiser, Heather Spalding.



The curiously robust contingent of phycologists from the University of Alabama at Birmingham (including your humble newsletter editors, underneath the arrows)



Photo by Nicole Pietrasiak

Would you like to get a selfie with a famous phycologist? I mean, who wouldn't, right? Then make plans now to join us next year in Vancouver!

**2018 PSA Meeting: Vancouver, BC, Canada
(July 27 – August 3, 2018)**



**Joint meeting with
International Society of Protistology (ISOP)**

PSA Annual Business Meeting Minutes

**June 6, 2017
Monterey, CA**

The meeting was called to order at 4:43 by PSA President Tim Nelson with ca. 35 members in attendance.

The meeting began with a short presentation by Bowen Jiang – a guest speaker on the Algae Academy, aimed at K-12 education, describing the middle school curriculum developed and deployed by the group. Presented a plea for volunteers for the project. See thealgae.foundation.org for details.

Approval of 2016 minutes: motion to approve from Gayle Hansen, 2nd from Paul Gabrielson, all approved.

Treasurer's Report – Eric Linton – accounting and taxes for the year have been completed. We maintain memberships in AIBS and NSCA. The society is insured for its meetings. Now using Xoom for money transfers. Amazon Smile allows a small amount of PSA member purchases to come to the Society (over \$300 so far). Eric presented a fiscal year summary for 2016: \$709K total income, \$400K donations, total expense \$248K, with net income of \$62,149. For FY 2017, so far our total income is \$158,774, expenses \$80,643. Profit & Loss – the Lang donation resulted in a jump in income in 2015/2016 and now we are in a more normal trend. Current assets of PSA at \$3,195,355, and has been growing each year.

Eric will verify FDIC limit on accounts.

Approved 2018 budget would result in deficit of \$26,577, but Eric explained this would not be a likely scenario given that we never spend down all lines.

Recommendations from Eric – transfer ca. \$100K to endowment at the end of the year, and leave the remainder for operating costs.

Report was accepted by the membership.

Fund Manager's Report – Steve Murray – Report of endowment funds. We have been employing a low risk strategy, which is designed to maximize annual returns, rather than growing the endowment. Endowment currently contains almost \$2.7 million. In addition to this, Steve manages the Treasury Reserve, which currently includes ca. \$131K, and is designed to allow the Society to operate and publish the Journal one year post-dissolution of the Society. This account is projected to earn ca. \$2,872 this year, and the BoT may want to re-visit the intent of the fund. Projected earnings on the endowment are ca. \$64,626, for total projected earnings at \$67,498. The endowment consists of a series of accounts, which Steve explained. The endowment gain from 2015 to 2017 has been over \$391K. The Journal of Phycology fund has been approved for elimination. Transfers from the Treasury have been used to shore up endowment lines in an attempt to fully fund all of our endowment expenditures. Earnings in 2016 are greater than projected expenditures in 2017. Steve emphasized that the Hoshaw and Croasdale endowment lines are not fully funded relative to our expenditures, but that underfunded lines are covered with transfers from other lines.

We are projecting a \$7,874 deficit in 2017 earnings / 2018 expenditures for several reasons. We expect to spend the Lecture & Symposium line (we have not always done this in the recent past), and also plan to

spend more on the Hoshaw line to get more students to the 2018 meeting at UBC. Transfers from the Treasury will make up these shortfalls and help build the principal of these lines.

Expenditures have been reasonably consistent recently. We need \$60-70K in earnings in each year to close the gap in earnings versus expenditures. Raised interest rates would aid this.

New money to the endowment includes transfers from the endowment (major source), auction / headquarters sales, publications revenue, and new donations to the endowment.

Steve outlined the donation campaign to support the Hoshaw and Croasdale endowment lines, which will be continued this next year. Last year we raised \$600 for Croasdales and \$2,225 for the Hoshaw fund. Steve will ask Wiley if a link to donate to the PSA endowment can be added to the renewal forms.

The Fund Manager's Report was approved by the membership.

Membership Director's Report – Maggie Amsler – We currently have 932 members, and the membership is holding steady. 35 new members have joined this year, including 20 new student members. Maggie presented a proposal to raise the membership dues by \$5 next year for regular and joint members (not student/postdoc/retiree categories), as was requested by Wiley. Opinions were presented from the membership that they appreciate relatively low membership rates, but also that they would prefer a \$5 increase at regular intervals over a much larger one later on. Motion to approve the membership increase was unanimously approved.

BoT Chair's Report – Rick McCourt – Rick presented a very optimistic future for PSA based on a strong endowment and membership. He recommended careful management of the endowment, targeted fundraising efforts, involving members in the Society, attending the annual meeting, supporting the Journal, and donating to the Society in various ways, including via the Legacy Society. Rick introduced Morgan Vis as the incoming Chair of the Board of Trustees, and Rick was acknowledged for his leadership over the last number of years.

Managing Editor's Report – Mike Graham – The current Editorial group is now in its 6th year working together, and things are functioning very well now. Mike described efficiencies that have been put in place over the last few years for the Journal, which are now reaping benefits. A high rejection rate of about 60% for the first few years has led to a strong increase in the quality of submittals to the Journal, and the acceptance rate is now at 55%. Papers are being accepted or rejected much faster, due in large part to the Reject Without Review category. New initiatives: education and outreach at the K-12 level will be emphasized with new materials, and new virtual issues focusing on algae in the news will be produced (e.g. biofuels, ocean acidification). Currently there is a shortfall in publications, and there is room for more high profile, rapid response publications. Very low turnover of Associate Editors, which is a good sign. Mike introduced Sarah Jeffries, who is the new Assistant to the Editors.

Past President's Report – Paul Gabrielson – Paul made recommendations to reduce the number of people on certain committees because the committees are difficult to fill and large membership on these committees is not needed. Specific proposals:

- 1) Public Policy Committee – make committee ad hoc rather than standing.
- 2) Elections Committee – reduce number of appointed members from 5 to 2.
- 3) Communications Committee – reduce from 6 to 3.

- 4) Membership Committee – reduce appointed members from 3 to 1.
- 5) Education Committee – reduce number of appointed members from 6 to 2.

If any committee chair needs more members, the chair can appoint them in consultation with the President. These changes would require by-law changes on the next ballot.

The question was raised as to whether have we considered consolidating any of the committees (i.e. to have a smaller number of more highly functioning committees, rather than fewer members on a committee)? E.g. Communications and Membership could be merged. The EC will consider this before drafting by-law changes for the next ballot.

President's Report – Tim Nelson – Tim reported on the elections results for next year:

VP/President Elect – Kirsten Muller

International VP – Joe Zuccarello

Secretary – Patrick Martone

Student Representative – Arley Muth

Editorial Board - Chuck Delwiche, Suzanne Fredericq, Louise Lewis, John Wehr

Program Director – Amy Carlile

BOT Chair – Morgan Vis

All by-law amendments were approved.

Tim acknowledged the excellent work of the committees so far this year. A student listserv was set up just for PSA students. Tim reported that PSA has been active in CASS, which has a new member (North American Lake Management Society), which he hopes we will be able to partner with in the future. Tim recognized two phycologists who passed away during the past year: Ted Smayda and Milt Sommerfeld.

VP / President-Elect's Report – Alison Sherwood – Alison reported that planning is underway for several symposia at next year's meeting in Vancouver, including one to recognize the long history of phycological study at UBC, and a biofuels symposium to honor Milt Sommerfeld. Work is also underway to help secure the long term future of AlgaeBase.

Communications Director – Jeff Morris – Jeff has been focusing on the social media presence of PSA, and encourages submissions from the membership on new algae-related items. He will also be looking at updating the PSA listserv to a new service. The deadline for submissions to the next issue of the PSA Newsletter is August 15.

Program Director's Report - Tim Nelson for Dale Casamatta – Tim reported that Mike Graham has managed to secure an extra hour of happy hour for hotel guests and daily parking will be waived for hotel guests due to the extensive and unexpected renovations of the hotel during the conference. PSA will also be receiving a substantial rebate.

Vancouver 2018 meeting - Patrick Martone reported on the 2018 meeting at the University of British Columbia, which will be held July 27 – August 3, 2018. Immediately following PSA, two other protist-related meetings will be held on site: ISPP and ISPR. PSA 2018 will be a joint meeting with ISOP.

Motion to adjourn was seconded, and unanimously approved at 6:27pm.

In Memoriam



Remembering Milton Sommerfeld (1940-2017), ASU's 'Wizard of Ooze'

Adapted with permission from [ASU Now](#)

What's so great about algae?

If you had the good fortune to meet Milton Sommerfeld, you have a hearty answer to that question.

Appropriately dubbed “The Wizard of Ooze,” Sommerfeld illuminated the world of algae with vibrant imagery, bubbling-good humor and — if you were lucky — a mouthful of algae cookie, freshly baked by his wife, Carolyn.



Sommerfeld unlocked algae's potential, demonstrating its boundless possibility while leaving an enduring legacy of research, both at Arizona State University and well beyond its walls.

Catching the algae bug

Sommerfeld grew up in rural Texas on his family's farm. Not only did this upbringing teach Sommerfeld the importance of hard work, resilience and integrity — virtues he continually demonstrated to his students and colleagues — it also introduced him to a specific slimy-green substance.

One of his designated farm duties was cleaning the cattle trough, which reliably flaunted a shiny coat of algae. Despite giving it a good scrub every week, the algae always returned. He puzzled at how and why it grew so fast.

Sommerfeld's interest in algae was really piqued when a fellow colleague asked him to evaluate the pond scum in his pool — not uncommon in the Phoenix metro area where private pools are nearly a necessity. The colleague asked Sommerfeld to help him prevent the scum from reoccurring, and a four-decade career in algae — from biofuels and bioproducts to toxins and bioremediation — was born.

An influential career

Sommerfeld enjoyed an expansive ASU career sparkling with accomplishment. During 48 years as a professor, his advancement to department chair, then to associate dean and finally to co-director of the Arizona Center for Algae Technology and Innovation (AzCATI), he kept education and research firmly at the foundation of his success.

Much of Sommerfeld's legacy lies in the inception of the Laboratory of Algae Research and Biotechnology (LARB), which later became AzCATI — a unit of ASU LightWorks, recognized as the first national test bed for outdoor algae cultivation. He was critical in developing the Algae



An outdoor algal pond at AzCATI

Testbed Public Private Partnership (ATP3), now key to researchers and companies looking for third-party technology verification.

With AzCATI, Sommerfeld envisioned a place where students could gain the knowledge necessary to become tomorrow's workforce in the expanding field of algal biotechnology, and that is precisely what it has become.

Love for education

Sommerfeld's love for education dates back to his time as a high school teacher, his first job after obtaining his bachelor's degree in biology from Southwest Texas State College. He spent two years teaching before beginning his doctorate in plant biology at Washington

University in St. Louis. He later returned to education and remained there for the rest of his career.

As co-director of AzCATI, Sommerfeld developed an internship program that allows select high school students from ASU Preparatory Academy to spend a few hours a week at the facility. Here, they shadow graduate students and technicians while gaining invaluable lab experience before college. The concept has since extended to undergraduate ASU students — many of whom become research technicians after graduating.

In fact, Sommerfeld recently worked with former students to build algae-related graduate courses and hoped to one day establish an algae major.

A dedicated role model

Sommerfeld was always a fan of Monday morning meetings. He made sure to arrive five minutes early — punctuality being an attribute he always impressed upon his students — and to kick off meetings with gusto.

His passion and motivation were palpable to all who work with him, around him, and even to those who had only heard of him — forever embedded in his contribution to the center's "I LOVE Algae" logo.

When taking a picture, Sommerfeld was known to substitute the standard "cheese" for "algaeeee."

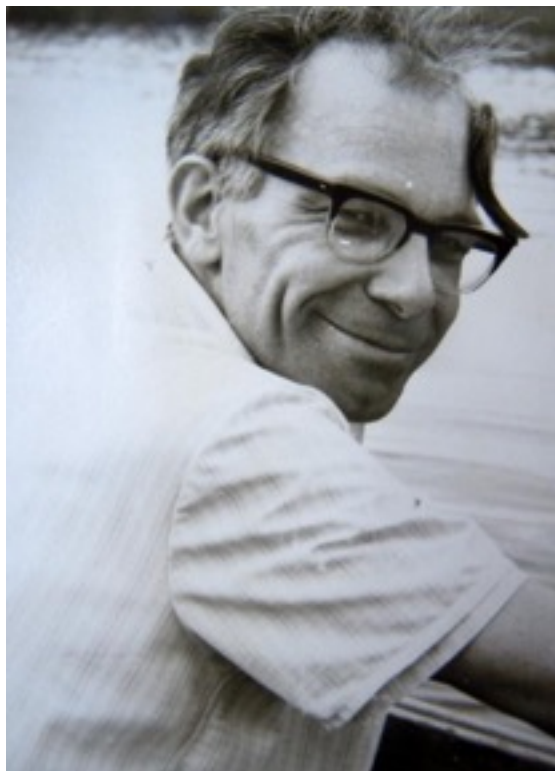
That's the snapshot that those who had the great privilege to know Sommerfeld will always remember: a brilliant scientist with a keen sense of humor and big, infectious grin that radiated his joy for doing what he loved most.

Milt Sommerfeld was the recipient of the 2016 PSA Award of Excellence and a longtime member of the society. He will be missed.

Jack Talling (1929-2017)

It is with regret, the Freshwater Biological Association has been informed that Dr Jack Talling sadly passed away peacefully, after a short illness, on 20 June 2017.

John Francis Talling, known as Jack to his many colleagues and friends, was born in Yorkshire and studied at the University of Leeds where he was awarded both his BSc and PhD. Field work for his PhD led him to work at the FBA Windermere where he worked closely with Dr John Lund and Professor Clifford Mortimer. In 1964, he began working at the FBA as a Senior Scientific Officer, studying Algal Physiology, progressing to Principal Scientific Officer the following year. He continued to develop his knowledge of limnology in Africa and the USA. His research on the Nile, the Ethiopian Soda Lakes and Lake Victoria, with his wife Ida, are outstanding contributions to African limnology. Over the years he has produced many papers and publications including 'Modern Phytoplankton Production in African Lakes' and FBA Spec 6, 'English Lakes'. Upon his retirement he then continued as an FBA Honorary Research Fellow and subsequently became a Vice President of the Association in 1996. He was also a Fellow of the Royal Society. Jack was a great supporter of the FBA and will be missed by his colleagues.



Dr. Jack Talling
(reprinted from [the Westmorland Gazette](#))

— Elizabeth Hayworth



*The Psychological 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, **Eric Linton**.*

Upcoming PSA Awards & Grants

PSA Award of Excellence

The Phycological Society of America is soliciting nominations for one or more Awards of Excellence. Recipients of the 2017 Award of Excellence will be chosen on the basis of their sustained scholarly contributions in, and impact on, the field of phycology, through a distinguished record of scholarly activity. Nominations will be welcomed for all fields of research on algae and also should highlight the candidate's service to the PSA and/or other phycological societies. The Award is a career achievement award for a living phycologist. Membership in the PSA is not a requirement for nomination. See previous awardees at <http://www.psaalgae.org/award-of-excellence/>.

Nomination 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 (2017) for nominees who were not selected in 2017 will automatically be reconsidered in 2018. Updates to nomination packages submitted in 2017 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 2017 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 Juan Lopez-Bautista, The University of Alabama. All nomination materials should be electronic files submitted by e-mail to jlopez@ua.edu.

In order to receive full consideration for the award that will be made at the 2018 annual meeting of the PSA, the complete nomination package must be received by January 31, 2018.

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, 2018

PSA Research Grants

The Phycological 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 phycological training by funding costs associated with attending phycological courses at biological field stations. Finally, the **Hoshaw Travel Awards** help students cover the costs of attending the annual PSA meeting.

Deadlines:

GIAR: November 1, 2017

Croasdale: March 1, 2018

Hoshaw: April 2, 2018

During the 2016-2017 funding cycle, there were a total of 74 applications to these programs. There were 40 applications to the GIAR program, and grants (totaling \$15,000) were awarded to 11 graduate students and 1 postdoctoral researcher. Seven graduate students applied for Hannah T. Croasdale Fellowships, 4 fellowships were awarded (totaling \$6,000). Twenty-seven students applied for Hoshaw Travel Awards to attend the PSA annual meeting in Monterey Bay, (California) during June 2017. A total of \$10,000 in travel grants were awarded to 18 students, with individual awards ranging from \$250 to \$1,000.

FUTURE DEADLINES: The deadline to apply for the GIAR program is Wednesday 1 November 2017. The deadline to apply for the next Hannah T. Croasdale Fellowship competition is Thursday 1 March 2018. The deadline to apply for a Hoshaw Travel award to attend the 2018 annual PSA meeting (in Vancouver, British Columbia, Canada) is Monday 2 April 2018.

MORE INFORMATION: Daniel Thornton, Department of Oceanography, Texas A&M University (dthornton@ocean.tamu.edu)
<http://www.psaalgae.org/grants-and-fellowships/>

PSA now accepts donations through Paypal.
Please support the Hoshaw award and other PSA
Grants by following this link and donate to support
student travel to the annual PSA meeting!

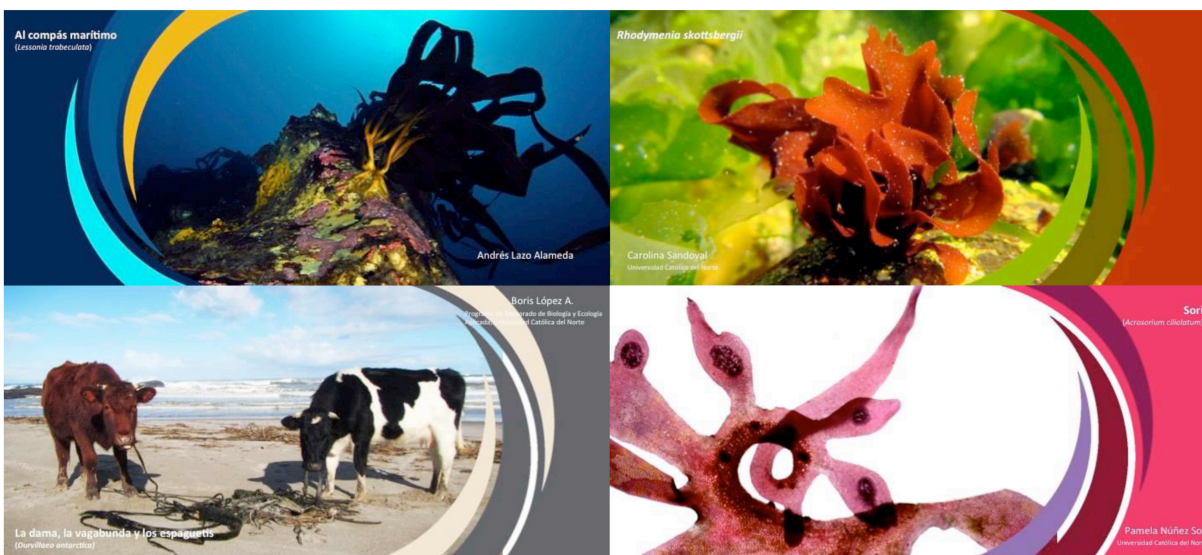
<http://www.psaalgae.org/endowment-donations>

X Congress on Chilean Micro and Macroalgae: Advances in biodiversity, production, and use of derived products

Over the course of a week, national and international phycologists, researchers, students, and the general public were brought together as part of the X Congress on Chilean Micro and Macroalgae in Coquimbo, Chile (July 18-21, 2017). The congress was held in a historic neighborhood of Coquimbo and was organized by the Universidad Católica del Norte, namely through the Facultad de Ciencias del Mar, and its academic departments – the Center for Research and Technological Development in Algae, the Department of Marine Biology, and the Department of Aquaculture. The Chilean Society of Phycology (SOCHIFICO) was co-organizer of the congress.

The congress hosted more than 152 attendees, which included people from Chilean universities, as well as from many international universities. Featured speakers were Dr. Charles Amsler (*Antarctic Phycology Beneath the Ice and Waves*), Dr. Roberto Abdala (*Algae as nutraceuticals for human health: the past, present, and future*), and Sr. Antonio Muiños (*Porto-Muiños: Vegetables of the sea*). A variety of symposia, roundtables, and workshops were held as well. A video screening of the documentary series *Chile, Underwater Worlds* was held in the Cultural Center Palace along with a photography contest (see winning photos below). The Alfredo Llaña Achievement Award was given to Dra. Erika Fonck (Universidad Católica del Norte) and Mariela González (Universidad de Concepción). Student awards went to Nicolás Latorre's oral presentation entitled "Metabolic analysis of tolerance factors to oxidative stress triggered by desiccation in the red macroalgae *Pyropia orbicularis* (Rhodophyta, Bangiales)" and Mauricio Moncada's poster "Glycoconjugate systems formed by alginic acid and 6-amino- β -cyclodextrin with biotechnological applications".

During the General Assembly of SOCHIFICO, a new board was selected that will assume 3-year terms beginning in September 2017. The new board members include Professor Loretto Contreras-Porcía (President), Jaime Zamorano (Vice-President), Cristian Bulboa (Secretary), Cristian Agurto (Treasurer), and Felipe Pizarro (Director). **The next congress is scheduled to take place in 2021.**



**British Phycological
Society
66th Annual Meeting
Southend, Essex
Monday 8th to Thursday 11th
January 2018
Radisson Park Inn, Southend**



The programme for the 66th BPS Annual Meeting in Southend, Essex is now taking shape. With arrivals from afternoon on Monday, 8th January and departures after lunchtime on Thursday 11th January, a full programme is planned. Special sessions are planned on applied freshwater research, seaweed in blue biotechnology, and microphytobenthic biofilms. Registration and full information will be available at [the BPS website](#).

Registration fee: £90 for BPS members, £110 for non-members of BPS. A late registration surcharge will apply. Registration allows for submission of abstracts, and includes abstract booklet, lunch on Tues, Weds, Thursday, and tea/coffee breaks Tuesday to Thursday, Taylor and Francis sponsored evening reception on Tuesday 9th. The BPS Annual Dinner will take place on Thursday 10th January. Cost approximately £30 per head. Three-course dinner and entertainment/dancing. Financial support for student members of BPS will be possible, see here for more information. We have negotiated excellent value for money rates for Bed and Breakfast in the Hotel with room options also available Thursday night if delegates wish to stay another day.

We hope to see many of you in January 2018 in Essex (one of the sunniest and driest counties of England)!



Graham J C. Underwood
Claire Passarelli
bpssouthend2018@gmail.com



MARINE BOTANY: Diversity and Ecology
Friday Harbor Laboratories, University of Washington
Dates: 11 June to 13 July 2018

Instructors: Dr. Paul Gabrielson (drseaweed@hotmail.com)

Dr. D. Wilson Freshwater (freshwaterw@uncw.edu)

Review of applications begins: 1 February 2018

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 conduct individual 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 2018 classes will be available on the FHL webpage in October 2017 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>



ASIAME 2 is a follow up of the first ASIAME thematic school which was held in Vietnam in 2013. The general objective of ASIAME is to bring together during two weeks young microbial ecologists (students and scientists) from South and South-East Asia that are focusing on marine ecosystems. The school covers fundamental (biogeochemical cycles, biodiversity, environment) and applied (aquaculture, marine biotechnology) aspects in marine microbial ecology.

ASIAME 2 fits in the context of the future "National Institute of Marine Biology" in Goa (India), in collaboration with CNRS and the university Pierre et Marie Curie. ASIAME 2 will take place over two weeks at the field unit of the National Institute of Ocean Technology (NIOT), the Andaman and Nicobar Centre for Ocean Science and Technology (ANCOST) located in Port Blair on the Andaman islands. ASIAME 2 will be conducted by 19 lecturers (10 from India, 6 from France, 1 from Philippines, 1 from UK, 1 from USA). The format of the school includes communication, hands-on training, data analysis, preparation of research projects with the aim to create networks and foster future collaborations. It will be open to 16 young Indian researchers, 7 from other countries from south-east Asia and 2 from France. Fellowships will be provided to students to cover (at least partly) expenses (registration, travel and accomodation).

For more information on how to apply please visit: <https://asiame2.sciencesconf.org/>



View from the NIOT laboratory

39th Annual Southeastern Phycological Colloquy

The Annual SEPC meeting will be held at the Center for Marine Science at the University of NC at Wilmington on 27 & 28 October. Registration forms will be made available shortly. Interested participants are encouraged to email the local organizer, Craig Bailey, at baileyc@uncw.edu



UNIVERSITY *of* NORTH CAROLINA WILMINGTON

EMPLOYMENT and FUNDING



MEL Outstanding Postdoctoral Fellowship Program

Since its establishment in 2005, the State Key Laboratory of Marine Environmental Science at Xiamen University (MEL) has been dedicated to pursuing cutting-edge research on global change, focusing on marine biogeochemistry and its interactions with the marine ecosystem, emphasizing fundamental and interdisciplinary research, and utilizing technological innovation. Rated as one of the excellent state key laboratories in China, MEL aims to foster innovative researches and interdisciplinary collaborations. With that in mind, MEL initiated the Outstanding Postdoctoral Fellowship Program. The Fellowship funds innovative, ground-breaking projects that have the potential to advance knowledge in marine environmental sciences and other interdisciplinary research that fits into MEL's four major research scopes.

MEL will offer overall 10 Outstanding Postdoctoral Fellowship places each year. Awarded fellows will be funded for 24-36 months with a salary of more than 200,000 RMB (before tax) per year, and a travel allowance of up to USD 2,000 within the valid fellowship period. Postdoctoral apartments or room renting allowance provided. The children of postdocs will enjoy the same privilege as those of Xiamen University faculty members in kindergarten and school registration. Postdocs will be bestowed the titles of Assistant Research Fellow, Associate Research Fellow or Senior Research Fellow during their stay in Xiamen University research centers, and excellent postdocs may be selected to become faculty members of Xiamen University.

For eligibility criteria and to apply online, go to <http://mel.xmu.edu.cn/fellowship/reg.asp>

The submission deadlines are May 31st and October 31st annually.

For more information, contact:

Ms. Suwei Weng or Prof. Kunshan Gao
State Key Laboratory of Marine Environmental Science
Zhou Long Quan Building, Xiang'an Campus, Xiamen University
Xiamen 361102, China
Email: wengsuwei@xmu.edu.cn
Tel: +86-592-2183033 Fax: 86-592-2184101

Clark University Biology Department

Tenure Track Assistant Professor of Ecology (BIO18)

Founded in 1887, Clark is a teaching and research university located in Worcester, Massachusetts, and one of the oldest graduate institutions in the United States. The University's mission is to educate undergraduate and graduate students to be imaginative and contributing citizens of the world, and to advance the frontiers of knowledge and understanding through rigorous scholarship and creative effort.

Clark University's Department of Biology invites applicants for a tenure-track appointment at the rank of Assistant Professor to begin fall 2018. The successful candidate will have research space in the Lasry Center for Biosciences and is expected to develop an externally-funded research program involving Ph.D., Masters, and undergraduate students. Any area of ecology will be considered; there will be opportunities to participate in interdisciplinary programs including Environmental Science, Mathematical Biology & Bioinformatics, and Public Health. Postdoctoral experience, evidence of external funding success, and promise of teaching excellence at undergraduate and graduate levels are desired. The successful candidate will teach Ecology, Biostatistics, and other courses in his or her area of expertise that serve the needs of the Biology Department.

Information about the department is available at www.clarku.edu/departments/biology/. We are especially interested in qualified candidates who can contribute, through their research, teaching, and/or service, to the diversity and excellence of the academic community.

Applicants should submit a curriculum vitae, statements of research and teaching interests, and three key publications in one pdf document. Three letters of reference should be submitted by the referees via email to the Ecology Search Committee (ecology@clarku.edu). Letters can also be mailed to the Chair of the Ecology Search Committee, Department of Biology, Clark University, 950 Main St, Worcester, MA 01610-1477. E-mail inquiries may be directed to Justin Thackeray (jthackeray@clarku.edu). Review of applications will begin **September 15, 2017**.

Clark University embraces equal opportunity as a core value. We believe that cultivating an environment that embraces and promotes diversity is fundamental to the success of our students, our employees, and our community. This commitment applies to every aspect of education, services, and employment policies and practices at Clark. Our commitment to diversity informs our efforts in recruitment, hiring and retention.

Clark University is an affirmative action/equal employment opportunity employer and strongly encourages members from historically underrepresented communities - inclusive of all women - to apply.

PhD project available in Marine Ecology

Maximising positive outcomes for threatened species from coastal infrastructure upgrades

A PhD scholarship is available at **Southern Cross University (SCU), Australia** to work on a collaborative research project with the NSW Department of Primary Industries – Fisheries (DPI Fisheries) at the National Marine Science Centre (Coffs Harbour). The successful candidate will work with leading researchers involved in maximising positive outcomes for threatened species from coastal infrastructure upgrades.

This PhD project stems from the prediction that rising sea levels will necessitate frontline coastal protection infrastructure (e.g. breakwaters, training walls and groynes) be upgraded over the next 30 years. These works, if done poorly, could negatively impact marine biodiversity, particularly, threatened species. In contrast, if done well, upgrades of coastal protection infrastructure could provide enhanced habitat for conservation-dependent species. Currently, the scientific knowledge required to make evidence-based recommendations to ensure positive outcomes does not exist.

This project will address these knowledge gaps using the (ca. \$15 million) upgrade of the breakwater at Coffs Harbour that is currently underway. It will also focus on the critically endangered marine brown alga, *Nereia lophocladia*, which has only been recorded on or near the Coffs Harbour breakwater.

The position is open to Australian and international applicants. The successful candidate will need to have an Honours or Masters degree in marine ecology or a closely related field. The project will involve boat work and scientific diving. The PhD scholarship will provide a tax free stipend of \$26,682 pa (AUD) and tuition fees will be waived, plus there is additional funding to support the research. Interested applicants should send their CV highlighting their research background to Associate Professor Brendan Kelaher – (brendan.kelaher@scu.edu.au). Only short-listed applicants will be notified. The closing date for applications is **Friday 4th September, 2017** but may be extended if the position is not filled.



Scientist/curator for coordinating and developing R&D activities and management of the cyanobacteria collection

Application deadline: Sept 7 2017

Degree : Masters (or equivalent) degree in Biology, or a related discipline

Job description:

The ULC collection is one of 7 decentralized biological resource centers integrated within the Belgian Coordinated Collections of Microorganisms (BCCM) (<http://bccm.belspo.be/>). The consortium with complementary expertise offers high quality microbial and genetic resources as well as a broad-ranging service portfolio and scientific expertise for industry and academia. BCCM runs a multi-site ISO 9001 quality management system. The ULC collection is specialised in cyanobacteria (<http://bccm.belspo.be/about-us/bccm-ulg>). Required tasks include:

- Day-to-day management of the biological material of the collection. This includes contributing to and supervising the implementation of the high standard of the collection in terms of diversity and quality of strains, their characterization and supporting resources (molecular, physiological, ecological, biotechnological)
- Contribute to the development of a portfolio of basic/applied research within the culture collection based on external funding sources, as well as scientific services to the customer community. This involves applying for external funding and writing scientific papers based on materials from the collection
- Support the technical staff in daily collection activities and client contacts
- Actively participate in the day-to-day working of the overall BCCM consortium and its working groups, including regular contacts with the curators of the other BCCM collections

Successful applicants will:

- have already conducted research within the field of the biology, biotechnology or ecology of cyanobacteria, algae or other microorganisms as proven by scientific publications in peer-reviewed journals, awards, patents...
- have practical experience in the isolation, cultivation, characterization and/or preservation of strains
- have good communication skills and have a very good knowledge of written and spoken English
- combine being a team player with a strong sense of autonomy, responsibility and initiative



The University of Liège (ULg) is fully part of the European and International higher education and research area. Offering a diversified educational offer in the French speaking part of Belgium, ULg has links with over 1,000 institutions worldwide and is integrated in international academic and scientific networks.

How to apply

All applications must be received no later than 07/09/2017 at 23:59 (CET) at awilmotte@ulg.ac.be with the following documents attached as one file:

- application letter
- CV
- a transcript of the required degree
- an overview of your relevant scientific publications
- the contact addresses and emails of two reference persons

We offer a temporary contract of 6 months which will be prolonged following a positive evaluation. Your appointment will start by 01/10/2017 at the earliest. Your remuneration will be determined according to official salary scales on the basis of your experience. Note that the budget does not allow for a post-doctoral salary scale.

All University of Liège staff members enjoy a number of benefits, such as 35 days of paid leave, a wide range of training and education opportunities, bicycle commuting reimbursement, etc. A complete overview of all our fringe benefits can be found on our website.

Attention: Late applications are not accepted. As the University of Liège maintains an equal opportunities and diversity policy, everyone is encouraged to apply for this position.

More information:

For more information about this vacancy, please contact Dr Annick Wilmotte (awilmotte@ulg.ac.be, 04/366.38.56).

Annick Wilmotte

Promotor - Curator

Tel (+32)(0)4-366 33 87

Fax (+32)(0)4-366 33 64

Bccm.belspo.be

GREAT AT SMALL THINGS



BCCM · ULC
Cyanobacteria Collection

Centre for Protein Engineering
Institute of Chemistry
University of Liège - Sart Tilman B6
B-4000 Liège



NEW BOOK TITLES



Seaweeds of Madagascar, Dr. Jean Mollion (Independently Published)

This book is a morphological description of the most common seaweeds encountered on the Southern shores of Madagascar. It also describes the present exploitation of two species in this country: *Eucheuma* and *Gelidium* for industrial colloids extraction. It will be useful to naturalists and scientists interested in the marine flora of Madagascar and will help industrials willing to valorize new marine resources in this part of the world.

From KOELTZ BOTANICAL BOOKS

Bunker, Frances St. P. D., Juliet A. Brodie, Christine A. Maggs, Anne R. Bunker and (foreword) Michael D. Guiry: Seasearch Guide to Seaweeds of Britain and Ireland. 2nd rev. ed. 2017. ca. 550 col. fotogr. Many distr. maps. 312 p. Paper bd. EUR 25.00 (7% VAT extra for EU –residents)

British and Irish shallow seas contain an astonishing 6% of the worlds seaweed species, more than 600 different seaweeds, and yet most divers, snorkelers and rockpoolers can put names to only a handful of them. This photographic guide aims to de-mystify seaweed identification for the non-specialist. Over 235 species are described in detail, with colour photographs, information on habitat, distribution and confusion species. Species are divided into three main sections, red, brown and green seaweeds, each with its own identification key and introduction. With over 550 colour photographs and illustrations this guide is an invaluable aid to any person wishing to identifying seaweeds. Seaweeds of Britain and Ireland has been produced as a part of the Seasearch project, which offers training in the identification of marine life and habitats and encourages recording by volunteers.

Costa, Livia F., Carlos E. Wetzel, Horst Lange - Bertalot, Luc Ector, Denise C. Bicudo: Taxonomy and ecology of Eunotia species (Bacillariophyta) in southeastern Brazilian reservoirs. 2017. (Bibliotheca Diatomologica, 64). 108 plates. 1 figure. 1 tab. 302 p.gr8vo. Paper bd. EUR 130,84 (Koeltz Book ID: 106981) 7% VAT extra for EU – residents (->EUR 140.00)

This volume provides an image-rich documentation of the morphology and ultrastructure of Eunotia species from southeastern Brazil, including description of new taxa and restudy of original materials. Moreover, it represents the first combination of taxonomic and ecological approaches to the study of Eunotia in tropical and subtropical regions. The materials studied includes samples from distinct habitats (planktonic, periphytic and surface sediment) collected from 32 reservoirs of southeastern Brazil. Eighty-seven Eunotia species are illustrated with light and scanning electron microscopic images on 108 plates and compared with similar taxa. Among these, 13 taxa are reported here for the first time from Brazil, and 15 new taxa are described. Morphometric features of all taxa are described and compared with data from the literature. The ecological preferences (optima) of 19 taxa were calculated for nutrients (total

phosphorus and total nitrogen), pH and conductivity. A comprehensive sample table with reservoirs, drainage basins, geographic coordinates and herbarium numbers and an extensive reference list complete the volume. The results of this work confirm the ecological preference of the genus for clean waters (ultraoligo- to mesotrophic). Two species (*E. rhomboidea* Hustedt and *Eunotia maconi* sp. nov.) were associated with eutrophic waters. This survey of *Eunotia* species from southeastern Brazil is of general interest to all readers working on Diatoms.

Cantonati, Marco, Martyn G. Kelly, Horst Lange - Bertalot (eds.): Freshwater Benthic Diatoms of Central Europe: Over 800 Common Species Used in Ecological Assessment. English edition with updated and added species. 2017. 3578 figs. on 135 plates. 942 p. gr8vo. Hardcover. (ISBN 978-3-946583-06-6)

The original German - language edition was published in 2013 as 'Diatomeen im Süßwasser - Benthos von Mitteleuropa. Bestimmungsflora Kieselalgen für die ökologische Praxis. Über 700 der häufigsten Arten und ihre Ökologie, by Gabriele Hofmann, Marcus Werum & Horst Lange - Bertalot, corrected edition 2013, edited by H. Lange - Bertalot.' 26 genera are included in the updated English edition of the book, whilst just in three cases genera that we included in the first (German) edition were removed (although they are still mentioned and briefly explained in the book). 10 species have been added to the book, 27 more have been mentioned under 'similar taxa', taxonomic concepts were clarified / updated for 36, and 39 were transferred from one genus to another. The English edition is intended primarily as a tool to facilitate consistent and accurate identification of diatoms in central Europe. The present diatom flora consists of different identification keys, species profiles in alphabetical order, and photographic plates. A general key directs to the 110 genera included in the book. For species - rich genera keys to the species are provided. While using these keys one must remain being aware that this book covers only frequent and / or locally abundant species. It may thus well be that some of the species encountered are not included in the keys. The lead editor updated the work to include the latest information on the taxonomy and ecology. Decisions on revisions were made following a very critical criterion: all taxonomy and ecology papers of which the authors were aware published until summer 2016 were considered, and all genera and species (if quantitatively relevant) were included if they appeared to be recognized in the main online resources (in particular, Diatoms of the United States, Algae Base etc.), and by the community of diatomists. This is a very practical criterion, which sometimes might lead to inclusion of taxa whose merits are still being debated, as long as it appears that they still might have some useful application in everyday practices and some recognition in applied ecology.

Qi Liu, John P. Kociolek, Bo Li, Qingming You and Quangxi Wang
The diatom genus *Neidium* Pfitzer (Bacillariophyceae) from Zoige Wetland, China: Morphology, Taxonomy, Descriptions. 2017. (Bibl. Diatomologica, 63). 281 figs. 2 tabs. 120 p. gr8vo. Paper bd. EUR 76.00

In this volume twenty-three species of *Neidium* are described. Sample materials were collected in the Zoigê Wetland, an expansive network of lakes and wetlands located in Sichuan Province,

China. From the total number of Neidium species reported, sixteen of them are described as new. 281 light microscope and scanning electron microscope photographs document all taxa and illustrate the morphology of these Neidium species. Detailed descriptions for each species are given and the species are compared with other, similar species from other regions of the world. The variability in valve morphology in the genus, including presence and distribution of renilimbi, longitudinal canals, central nodule and striation, are documented. A comprehensive table with morphometric details of all described Neidium species rounds up the volume. This survey of Neidium species almost doubles the number of new Neidium taxa described from China and is of interest for all readers working on diatoms and Bacillariophyceae.

Hustedt, Friedrich: The Pennate Diatoms. A translation of Hustedt's "Die Kieselalgen, Teil 2", with supplement by Norman G. Jensen. 1985. Illustrated. XVIII, 918 p. gr8vo. Hardcover. EUR 120.00 (ISBN 978-3-87429-246-7)

Contents (partly): Pennatae: 1. Araphideae (Fragilarioideae (Entopyleae/ Tabellariaeae/ Fragilarioideae))/ 2. Raphidioideae (Eunotioideae)/ 3. Monoraphideae (Achnantheroideae)/ 4. Biraphideae (Naviculoideae)/ - Index to Species in Part II/ Publication Dates for Installments of Part II/ Supplement to Part II/ Supplement to Part II, Table of Contents/ Supplement to Part II, Index to Genera and Species/ Appendix A, The Life and Work of Friedrich Hustedt/ Appendix B, Scientific Publications by Friedrich Hustedt/ Appendix C, The Friedrich-Hustedt-Arbeitsplatz. - This is the only volume of the 'Kieselalgen' which was translated into English.

Hustedt, Friedrich: Die Kieselalgen Deutschlands, Österreichs und der Schweiz. Mit Berücksichtigung der übrigen Länder Europas sowie der angrenzenden Meeresgebiete. 3 Vols. 1927-1964. (Rabenhorst, Kryptogamenflora von Deutschland..., Band VII). 4220 figs. XII, 2581 p. gr8vo. (Reprint). Hardcover. EUR 380.00

A classic item on Diatoms of Central Europe. - This is a 1991 reprinted edition reprinted in cooperation with an Indian publisher. The larger part of the illustrations are line-drawings.

Hustedt, Friedrich: Systematische und ökologische Untersuchungen über die Diatomeen-Flora von Java, Bali und Sumatra, nach dem Material der Deutschen Limnologischen Sunda-Expedition. SYSTEMATISCHER TEIL. 1938. (Sonderabdruck aus dem Archiv für Hydrobiologie, Suppl.-Bd. XV 'Tropische Binnengewässer, Band VII', 1937/1938; Seite 131-177 mit Taf. IX-XII, Seite 187-295 mit Taf. XII-XX, Seite 393-506 mit Taf. XXI-XXVII und S. 638-790, & Arch. f. Hydrobiologie, Suppl. XVI, S. 1-155, 274-394). 44 Tafeln. 16 Fig. 120. Tab. 709 S. Hardcover. EUR 269.00

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From Schweizerbart Science Publishers

Wynne, Michael J.: A checklist of benthic marine algae of the tropical and subtropical Western Atlantic: fourth revision 2017. Nova Hedwigia, Beiheft 145. 202 pp. Paper bound. EUR 92.00 [or \$142.80 plus shipping from Balogh International]

This fourth revision of M. J. Wynne's "Checklist" is an exhaustively prepared and updated compilation of the taxa of benthic marine algae, or seaweeds, currently recognized in the broad area of the tropical and subtropical Western Atlantic. Thus, this checklist covers the region from the warm temperate eastern United States (Cape Hatteras of North Carolina) to southern Brazil, which corresponds to the same domain as the 1960 algal flora published by W. R. Taylor. This fourth revision of the checklist includes a total of 1,553 species of benthic marine algae: 215 members of the Ochorophyta (Pelagophyceae Phaeophyceae, and Xanthophyceae), 1,014 Rhodophyceae, and 324 Chlorophyceae. When 175 infraspecific taxa are included, the total tally of current names is 1,728. There are 774 notes in regard to specific points related to nomenclatural issues, new records, new taxa, and other pertinent information.

Taxonomy and ecology of Eunotia species (Bacillariophyta) in southeastern Brazilian reservoirs

Ed.: Livia F. Costa; Carlos E. Wetzel; Horst Lange-Bertalot; Luc Ector; Denise C. Bicudo

2017. 302 pages, 1 figure, 1 table, 108 plates, 14x23cm

(Bibliotheca Diatomologica, Band 64)

ISBN 978-3-443-15055-2, paperback, 149.00 €

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The diatom genus Neidium Pfitzer (Bacillariophyceae) from Zoige Wetland, China.

Morphology, Taxonomy, Descriptions

Ed.: Qi Liu; John P. Kocielek; Bo Li; Qingming You; Quanxi Wang

2017. 120 pages, 281 figures, 2 tables, 14x23cm

(Bibliotheca Diatomologica, Band 63)

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Ed.: Mitsunobu Kamiya; Sandra C. Lindstrom; Takeshi Nakayama; et al.

2017. XII, 171 pages, 38 figures, 17x25cm

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Fundamental and Applied Limnology, Vol. 189, No. 2: Special Issue: 10th CE-Diatom - Relationships between diatom composition and environmental conditions

Ed.: Éva Ács; Kristina Bucskó

2017. 92 pages, 21x28cm

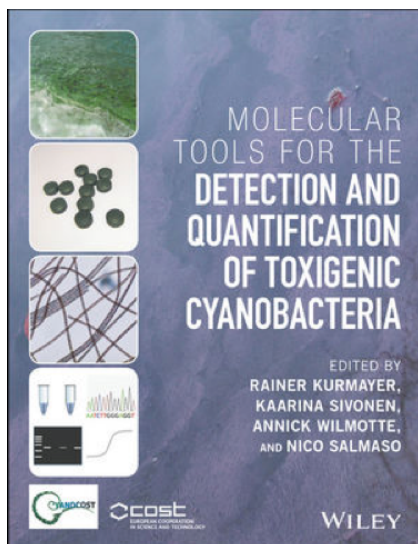
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A new molecular handbook

This handbook is describing the molecular monitoring of toxigenicity of cyanobacteria (blue-green algae) in surface waters including lakes, rivers, drinking water reservoirs and food supplements. In water bodies, cyanobacteria mass developments and cyanobacteria harmful algal blooms (cHAB) are highly favoured by eutrophication and global temperature rise.

Thus, a number of introductory chapters covering the various subjects is followed by a series of Standard Operational Procedures (SOPs). The list of SOPs contains the molecular tests that could be routinely used in environmental monitoring. The introductory chapters are

concise papers written according to an *a priori* given outline, covering the purpose, methodological details and advantages and disadvantages of the various tools. Although through each introductory chapter the individual SOPs are referred to, each SOP should be considered as an independent unit with its own (essential) references section. All published SOPs have been used in the lab of the respective authors for years and are considered robust. They are based on reference strains which are reliably available from international culture collections.

The book is intended to be used by trained professionals analyzing toxigenicity of water samples in the laboratory in both academic and governmental institutions, as well as technical offices and agencies which are in charge of water body surveillance and monitoring. Students will learn important methods' standards of essential protocols including steps from sampling until results evaluation. More generally the book will benefit the reader by (i) increasing the knowledge of the currently available molecular tool box, and (ii) enable the reader to carry out state-of-the-art analyses on the toxigenicity of cyanobacteria in surface water.

For more information on the content: <http://eu.wiley.com/WileyCDA/WileyTitle/productCd-1119332109.html>



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RESOURCES



Danish desmids
Natural History Museum of Denmark

A new homepage on Danish desmids has been launched at <http://desmid.ku.dk/english/>. It essentially covers information of two old desmid collections held by The Natural History Museum of Denmark. The two collections consist of 510 ‘permanent’ slides made by Richard T Hoff and Frederik Børgesen, respectively. Every slide has been photographed and given a unique ID, information made searchable and direct links to AlgaeBase included.

Unfortunately, many slides are in poor conditions due to desiccation of the glycerine mounting medium, and in many slides specimens are not even recognizable any longer. However, interesting notes appear on many slides and on Hoff’s ID-cards. These have also been digitized and assembled into a pdf-file. Some ‘cards’ have annotations made by the famous Swedish desmidiologist C.F.O. Nordstedt as he was requested to go through the Hoff collection by the University of Copenhagen. A work which resulted in the small publication: Nordstedt, O. (1888) Desmidiaceer från Bornholm, samlade och delvis bestämda af R.T. Hoff, granskade af O. Nordstedt. Vidensk. Medd. Naturhist.

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