

PHYCOLOGICAL NEWSLETTER

A Message From PSA President Rick Zechman

It's an exciting year for PSA as we celebrate the 50th Anniversary of the *Journal of Phycology*, the premier journal of algal biology! I hope you will plan to join your colleagues in Philadelphia, Pennsylvania USA, the City of Brotherly Love, for the Phycological Society of America 2015 Annual Meeting- "50 for 50—Phycology in Philly"- as we celebrate this milestone.

The meeting will be held August 8 – August 13 at Drexel University, and at the Academy of Natural Sciences, the first natural history museum in the US and steeped in botanical and phycological history. In addition to the great plenary sessions, field trips and social events being planned, there are many culturally rich things to experience in Philadelphia, such as the Liberty Bell and Independence Hall, the LOVE sculpture, Philadelphia Museum of Art, the Italian Market and the Mütter Museum, to name just a few. Or you can enjoy a Philly cheesesteak relaxing in Rittenhouse Square, or attend a Phillies baseball game. More information about the upcoming annual meeting can be found [here](#) on the newly upgraded PSA website.



I would like to thank the membership for the opportunity to serve the PSA as President this year, and also former President John Stiller and the other PSA officers for their unwavering leadership of the Society. There is still much work to do as we increase our membership, our diversity and our national and international presence in support of the science of algae. I hope you will reflect on the pivotal role that PSA has served in your own professional development (as it has for so many), and consider serving in a PSA leadership position or on a committee that suits your interests. PSA needs your energy and engagement to continue serving the phycological community through its publications, outreach, student grants and awards.

I look forward to seeing you in Philadelphia!

With best wishes,

Rick Zechman



PSA CALL FOR NOMINATIONS

Dear PSA Members,

We are currently seeking nominations for the following open positions:

- ★ Vice President/President Elect
 - You may nominate 2 individuals
- ★ International Vice President
 - You may nominate 2 individuals
- ★ Treasurer
 - You may nominate 2 individuals
- ★ Student Member Representative
 - You may nominate 2 individuals
- ★ Editorial Board
 - You may nominate 4 individuals

Deadline:
February 14, 2015
midnight (EDT)

To nominate individuals, please access your nominations form which was sent to your email that is currently registered with PSA. If you have any technical difficulties, please contact Wayne Litaker (wayne.litaker@noaa.gov).

Sincerely,
Wayne Litaker
Elections Committee Chair



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PSA ANNUAL MEETING - 2015

Greetings Phycological Fans and Well-wishers,

It is with great pleasure that we announce registration for the upcoming 2015 Annual PSA Meeting will begin in March and extend through May. The meeting will be August 9th-14, in historic Philadelphia, PA at Drexel University. An excellent assortment of phycological symposia, events and excursions are planned, and we are anticipating a wonderful meeting.

Among the many planned events are:

- Plenary talks and symposia on polar research, brown and green algae, biofuels, symbiosis, and other hot phycotopics
- A banquet at the Academy of Natural Sciences in Dinosaur Hall, in the shadow of *Tyrannosaurus rex* and his friends
- Field trips to freshwater and marine habitats
- Workshops on cyanobacteria, microscopy, and teaching metagenomics
- The night-life, food, and milieu of the City of Brotherly Love, one of the hippest cities on the east coast (<http://www.hipparties.com/hipphilly/>), and the meeting promises to be a memorable one!

Please look for further details soon on the [PSA website](#), and feel free to contact any of our meeting organizers if you have any questions.

We look forward to seeing everyone there!

Dale Casamatta, PSA program Director
dcasamat@unf.edu

Rick McCourt, Local Organizer
rmccourt@gmail.com

Naomi Phillips, Local Organizer
phillipsn@arcadia.edu



UPCOMING PSA AWARDS & FELLOWSHIPS

Bold Award

Students are invited to participate in the Harold C. Bold Award competition, awarded for the outstanding student research presentation at the Annual PSA Meeting. This award, named in honor of the late Professor Harold C. Bold, has been awarded at PSA Annual Meetings since 1974. The winner will be awarded a certificate and monetary prize.

Bold Award Eligibility: 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. Previous Bold Award recipients and those who have failed to give a scheduled Bold Award paper without valid reason are ineligible. Please see the [PSA website](#) for more information. **Important Note:** Students wishing to be considered for this award must notify the Award Committee chair via e-mail or regular mail on or before the abstract deadline. An ORIGINAL signed letter from the student's research director (mentor or major advisor) or department chair, verifying that the candidate is a student and that the work to be presented represents the initiative, imagination, and labor of the student must be sent to Dr. Patrick T. Martone (Award Committee Chair).

Please check the PSA website for future deadlines!

Lewin Award

Students are invited to participate in the Ralph A. Lewin Poster competition, awarded for the outstanding student poster at the Annual PSA Meeting.

Lewin Award Eligibility: An applicant for this award must be a student no more than one year past graduation at the time of the meeting where the work is presented and the student must also be a member of PSA. Please see the [PSA website](#) for more information. **Important Note:** Students wishing to be considered for this award must notify the Award Committee chair via e-mail or regular mail on or before the abstract deadline. An ORIGINAL signed letter from the student's research director (mentor or major advisor) or department chair, verifying that the candidate is a student and that the work to be presented represents the initiative, imagination, and labor of the student must be sent to Dr. Patrick T. Martone.

Dr. Patrick T. Martone, Award Committee Chair
Botany Department, University of British Columbia
3529-6270 University Blvd, Vancouver, BC Canada V6T1Z4
Ph. 1-604-822-9338, pmartone@mail.ubc.ca

Croasdale Fellowship

The Hannah T. Croasdale Fellowships are designed to encourage graduate students to broaden their psychological training by defraying the costs of attending psychology courses at biological field stations. The purpose of the award is to broaden psychological 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. Please note that this award is limited to psychology-related courses, other coursework topics are not eligible for this award. Students who receive this award will have reporting requirements to the PSA; please see the fellowship webpage for details.

**Application and
reference letter
deadline:
March 1, 2015**

Applications for the Hoshaw and Croasdale awards as well as any questions should be directed to Amy Carlile (acarlile@newhaven.edu)

Hoshaw Travel Award

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. Successful applicants will be notified prior to the meeting and the awards will be presented at the meeting.

**Deadline:
April 1, 2015 (or one
month before the
registration deadline)**

Prescott Award - Call for nominations

Please consider nominating a book for The Gerald Prescott Award. The Prescott Award recognizes scholarly work in English in the form of a published book or monograph (including edited volumes and e-books) devoted to psychology and published in 2013 and 2014. The award will be presented at the 2015 Psychology meeting. Please send nominations to Cathy Pfister, University of Chicago, cpfister@uchicago.edu, Chair, Prescott Award Committee.

**Deadline:
March 15, 2015**



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>

TRIBUTE

Sona Dolan 1953-2014

Sona Kim was a native of Pusan, South Korea. She obtained her bachelor and master's degree from the Pusan National Fisheries University, now called Pukyong National University. She obtained her PhD from Clark University, and was one of the first Korean women phycologists to obtain her doctorate in the USA. She studied the taxonomy of the articulated coralline algae of Bermuda. At the time of her death she was a Research Associate in the Department of Civil and Environmental Engineering at the University of Massachusetts, Amherst, in Prof. Chul Park's lab, studying the use of algal communities to remove nutrients from waste water. She is survived by her husband, Michael F. Dolan, of the UMASS Biology Department.

TRAILBLAZERS

The PSA web page has a new section featuring the forty Trailblazers that were published in previous Phycological Newsletters. Many of these articles include new photographs and are available in a pdf format. Take a look and learn more about your favourite trailblazing phycologist. <http://www.psaalgae.org/trailblazers/>



Carl Skottsberg



Erzsébet Kol



Baron J. B. G. M.
Bory de Saint-
Vincent

MEETINGS



REMINDER: Fourth Announcement 6TH EUROPEAN PHYCOLOGICAL CONGRESS

23-28 August 2015

Novotel Hotel West London

Sponsored by the Federation of European Phycological Societies
and the British Phycological Society

You are invited to participate in this exciting meeting.

Regular Registration is now open. Deadline is 1 March 2015.
*You have less than two months to register. After 1 March you will be
assessed for late registration fees. Register today!*

Four Plenary Speakers

John Archibald, Ellen van Donk, Georg Pohnert & Ester Serrao

Fifteen Symposia

algae in stressful environments; algal biodiversity and ecosystem function; algae-microbiome interactions; shedding new light on photosynthesis; global change and algal assemblages; the fate of marine forests; phylogenomics; molecular cell biology; ecology, physiology and taxonomy of freshwater phytoplankton; algal diversity and species delimitation; genetic engineering in algae; algae and signalling; omics and genetic resources; algal lipids; *Symbiodinium* as a model organism

In addition: oral papers and posters will be presented

Mid-week excursions: Stonehenge & Salisbury or Roman Baths & Bath

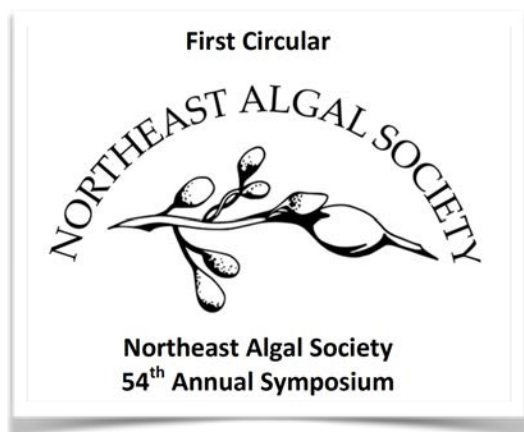
Registration is open at: <http://www.epc6.org>

Facebook: <http://www.facebook.com/EPC6London>

Twitter: @EPC6.org_congress; If you have any questions, please Email: epc6@nhm.ac.uk

The 54th Annual Northeast Algal Society Symposium will convene April 17th-19th, 2015 at the Genesee Grande Hotel in Syracuse, NY. Your co-conveners Hilary McManus, Gregory Boyer and Molly Letsch are planning an exciting meeting and look forward to welcoming you to our Syracuse symposium.

As always, the NEAS symposium will include a wide range of oral and poster presentations on many phycolgical topics. The relaxed atmosphere will provide an informal environment for students and professionals to meet with colleagues, exchange ideas and make new friends. Awards will be presented for undergraduate and graduate posters and oral presentations. NEAS members take great pride in their commitment to student advancement, and extend an especially warm welcome for all students to join us in Syracuse.



Lynn Rothschild at Laguna Blanca

This year's theme is Algae in the Extremes. Our keynote speakers will present variations on this theme: Lynn Rothschild (NASA-Ames), Louise Lewis (University of Connecticut), Ron Hoham (Colgate University), and Craig Aumack (Columbia University). We will also have a local focus on the unique ecosystem and restoration of Onondaga Lake, which was once said to be the most polluted lake in the world and is now a model system for restoration efforts. We plan to provide a variety of activities and resources towards these themes.

Venue Information: The Genesee Grande Hotel (www.geneseegrande.com) offers a relaxed setting for our meeting, with hotel rooms, conference facilities, and dining in one building. There is free parking on site and a variety of rooms available. Their sister hotel Park View (0.3 miles away) has additional rooms available and student rates. Downtown Syracuse is an easy walk from the Hotel and with additional restaurant areas an easy drive or shuttle ride away. Local museums (www.most.org), the zoo (www.rosamondgiffordzoo.org) and numerous parks (www.onondagacountyparks.com) offer ample recreational opportunities for accompanying family members.

Annual NEAS Auction: We encourage you to bring items to donate for the Society auctions (live and silent). These may include books, important reprints, phyco-art and other things phycolgical, as well as non-phycolgical items of value that will help raise funds for the students in our Society. Now is the time to start thinking about such items.

Student Book Awards: Students and post-docs will be able to compete for awards of a professional book pertinent to their program of phycolgical study. **Application due date March 1st.**

Student Travel Awards: The NEAS Student Development fund will be offering competitive student travel awards of up to \$100 to attend the annual meeting. A maximum of 25 awards will be made to student applicants to off set travel and registration costs for this years meeting. Details on applications will be included in the 2nd Circular.

Call for nominations: The following NEAS Officer positions will become vacant in 2015 and need to be filled by election during the NEAS meeting, April 17th-19th, 2015.

- Vice President/President-Elect: 2015-2016 (vice president) and 2016-2018 (president).
- Member At Large: 2015-2018

2nd Circular: The 2nd Circular will be sent in early February and will include a call for abstracts, registration forms, and details on the student travel awards. Early questions about meeting details should be addressed to Hilary McManus (mcmanuha@lemoyne.edu).



International Congress | June 15.-17.2015

UAMRiCh

Use of Algae for Monitoring Rivers
and comparable habitats

International Workshop | June 17.-19.2015

InBAT

International Workshop on Benthic
Algae Taxonomy

For more information check out:

http://www.muse.it/it/partecipa/Congressi-e-Convegni/archivio/UAMRiCh_InBAT_2015/Pagine/home_UAMRiCh_InBAT.aspx

Organizer & Chair: M. Cantonati. **Scientific Committee:** M. Cantonati, M.G. Kelly, E. Rott, S. Sabater, R.J. Stevenson, B.A. Whitton. **We look forward to welcoming you to Trento (Italy) in June 2015.**

Early Registration began January 7th and **will end Friday March 27th 2015** (this is also the **abstract submission deadline**). There will be ample possibilities to present contributions (oral & posters), and to publish in **special series of papers in international journals**.

The **International Symposia "Use of Algae for Monitoring Rivers"** date back to 1991, and, since then, have offered opportunities to review and discuss benthic-algae-based assessment approaches in the different countries, as well as improvements to approaches, methods, and techniques. The main aim of these Symposia has been the standardization of methods, the improvement of directives, and the discussion of novel approaches. **Keynote Speakers:** S. Poikane (EU official), E.J. Cox, M.G. Kelly, F. Rimet, E. Rott, S. Sabater, R.J. Stevenson.

The **International Workshop on the taxonomy of freshwater benthic algae** will be primarily targeted at applied ecologists and practitioners using algae and cyanobacteria for environmental assessment. However, it will also be of interest to environmental managers, practically-oriented taxonomists, university teachers and students. The general topic of the Workshop will be: **"Taxonomic and ecological characterization of species relevant for environmental assessment and monitoring"**. **Taxonomic Session Chairs:** **Diatoms:** M. Cantonati, B. Van de Vijver; **Cyanobacteria:** B.A. Whitton, E. Rott; **Red Algae:** M. Vis; **Green algae & other groups:** E. Shubert, S. Schneider.

There are many other reasons to join us, e.g.:

- **Participants only need to pay for those parts of the Congress, Workshop and related events in which they wish to participate.**
- **Competition** for UAMRiCh best student oral & poster presentation (**prizes:** High-value diatom ID books).
- **Congress venue** is a recently launched innovative Science Museum hosted in a **Renzo Piano building**.
- **Excursion** in the beautiful mountain surroundings of Trento (including the Dolomites, a **UNESCO World Heritage site**), lunch in restaurant with excellent local specialties, siliceous & carbonate stream sampling, wine tasting.
- **Great related events:** Small temporary exhibition of surrealist artworks (pictures) based on algae images by Doris Gesierich & Werner Kofler + "microriverscapes" by M.G. Kelly, the **Expo in Milan**.



We are happy to inform you that the forthcoming International Rhodolith Workshop, will be celebrated between Monday 27 to Friday 31 July 2013 in San José, Costa Rica, Central America. The event will take place in the auditorium of the Ciudad de la Investigación, University of Costa Rica. Deadline for abstract submission: March 15, 2015 For more information visit our webpage <http://rhodoliths2015.org/> or email us at contact@rhodoliths2015.org. You can also follow us on Facebook at www.facebook.com/VRhodolithWorkshop2014

Happy new year and we look forward to seeing you in Costa Rica!

U.S. Algal Toxin Conference Hosted by Akron Global Water Alliance (AGWA) and Netherlands Water Alliance

You are invited to participate in the 2015 U.S. Algal Toxin Conference hosted by the Akron Global Water Alliance (AGWA) and the Netherlands Water Alliance on **April 29 and 30, 2015**. Speakers and participants are anticipated to come from the United States and overseas including the Netherlands. The program will cover such topics as Watershed Management and Operational Techniques; Watershed/Raw Water Sampling and Analysis; Watershed Operational Products; Water Plant Management and Operational Techniques; Water Plant Operational Products; Distribution System Sampling and Analysis; Distribution System Emergency Preparedness; Distribution System Operational Products; Planning Tools & Techniques; Current U.S. Regulations and Legislation; and Research on Treatment Alternatives.

For more information please visit <http://www.agwaevent.net/>

Global Solutions to Regional Problems: Collecting Global Expertise to Address the Problem of Harmful Algal Blooms

Workshop at Bowling Green State University on **April 13-14, 2015**. The goal of this NSF and NOAA sponsored workshop is to discuss the current science on bloom formers and factors contributing to cyanobacterial blooms, along with identifying knowledge gaps regarding bloom prevention/remediation. Additionally, discussion of case studies on current and prior remediation programs will help guide the development of a workshop paper that presents potential future strategies for bloom prevention, mitigation and long-term research goals. Topics include:

- Biology of bloom-forming species
- Environmental factors underlying bloom formation
- Sensor development in bloom detection
- Remote sensing
- Prediction of blooms
- Best practices for control and remediation

The registration website will be available in a couple weeks with additional information.

For more information, please contact: George S. Bullerjahn (bullerj@bgsu.edu) or Robert Michael McKay (rmmckay@bgsu.edu). Dept. of Biological Sciences, Bowling Green State University, OH.



8TH SYMPOSIUM ON
HARMFUL ALGAE IN THE US

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THE QUEEN MARY
LONG BEACH, CALIFORNIA ~ NOVEMBER 15-19 2015
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Help spread the word by Liking and sharing the link on our Facebook page!

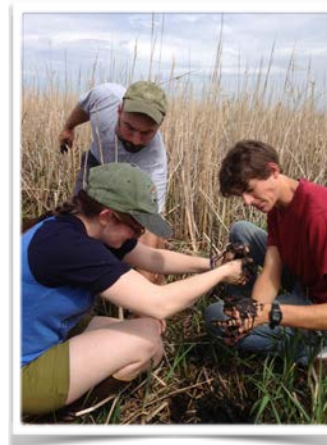
FIELD COURSES

LAKESIDE FIELD COURSES

ECOLOGY AND SYSTEMATICS OF DIATOMS

26 May – 19 June 2015 Instructors: Mark Edlund, Sylvia Lee

This course, now in its 51st year of being offered, will introduce students to field and laboratory study of freshwater diatoms. We will visit diverse aquatic habitats of the Upper Midwest to make live and fossil collections of most freshwater diatom genera. Students will learn techniques in collection, preparation, and identification of diatoms. Lectures will cover diatom taxonomy, systematics, stream and lake ecology and biogeography. Students will assemble individual voucher collections as a means for practicing diatom research and species verification. As a final project, students will complete a taxonomic treatment of a species that will be ready to submit for peer-review to the *Diatoms of the United States* web project. This is an intensive, field-oriented class appropriate for advanced undergraduate students, graduate students, and post-graduate workers in ecology and diatom taxonomy. Students are encouraged to bring individual research materials, and there will be opportunities to discuss research approaches and practical problems of using diatoms in ecological and paleoecological applications. Two scholarships, the CW Reimer Scholarship and the EF Stoermer Scholarship, will be awarded based on scholastic merit. Class size is limited to 10.



FRESHWATER ALGAE

22 June - 17 July 2015 Instructor: Kalina Manoylov

An ecological perspective is used to explore the diversity of photosynthetic microbes that form the energy base of freshwater ecosystems. We will examine environmental and economic concerns caused by algal growth, including harmful algal blooms. Field collections will be used to identify the common genera of algae, study life histories, and examine environmental factors that affect growth and distribution. For a class project, we will investigate an in-depth applied issue of the algae in Lake West Okoboji. Students should have a working knowledge of basic biology. Class size is limited to 10.

ECOLOGY OF ALGAL BLOOMS

20 July - 31 July 2015 Instructor: Mindy Morales

Harmful algal blooms (HABs) are increasing in frequency and intensity worldwide. Despite the ubiquity of blooms, only a handful of algal and Cyanobacteria species are considered “bloom-forming”. This course will investigate ecological mechanisms that trigger and maintain blooms in aquatic ecosystems, as well as the physiological advantages that allow some species to bloom while others do not, with emphasis on Cyanobacteria. This intensive course will combine discussion of primary literature, applied field sampling techniques, species level taxonomic identification and physiological characterization (stable isotope or toxin analyses) of local bloom-forming taxa.

More Information?: <http://www.continuetolearn.uiowa.edu/lakesidelab/>

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Mindy Morales

Iowa State University

ammora@iastate.edu



FRESHWATER ALGAE COURSE 2015

Where and when?

Kindrogan Field Centre, Enochdhu, Blairgowrie, Perthshire, Scotland (near the tourist area of Pitlochry), **Friday, 26 June – Friday, 3 July 2015**. This is the **20th** year that the course has been offered.

Kindrogan Field Centre The Kindrogan Field Centre is a self-contained and fully equipped field station set in wooded grounds on the banks of the River Ardlie in the picturesque Scottish Highlands. It lies within easy reach of some of the remotest areas of the UK with inspiring landforms and a rich range of wildlife habitats. There is accommodation for 113 persons. The Centre has been modernized and has a common room, library, dining room, drying room, five classrooms / laboratories, conference room and bar. Take a virtual tour inside the centre and the surrounding area at: <http://www.field-studies-council.org/kindrogan/>

What is the course about? The course takes full advantage of the excellent range of relatively unspoiled aquatic and terrestrial habitats in this beautiful area of Highland Perthshire to provide a sound introduction to the recognition, identification and ecology of freshwater algae. Emphasis will be placed on the use of the microscope and taxonomic keys (print and electronic) for identification to generic and species level, but also broader aspects of algal morphology, structure, reproduction, and classification (morphological and molecular). We normally see live examples of all major algal groups, including freshwater reds and browns. For those with some prior knowledge of the algae, we hope that the opportunity to study samples from a range of habitats will broaden their knowledge and/or allow them to focus on particular groups. Field trips, on foot or by vehicle, will be varied, but not strenuous and will be complemented by laboratory work, illustrated talks and class discussion. An all-day field trip will sample numerous lochs, streams, rivers and marshes, including a whisky distillery tour. The last evening we assemble in the bar for our world-famous “algal charades”.

Who are the course tutors? The Course Tutors, Dr Eileen Cox and Prof Elliot Shubert, have taught this course for the past 19 years and they have a wide-ranging expertise on freshwater algae. Eileen and Elliot specialize in diatoms and green algae respectively. We will be joined for part of the course by Guest Tutor, Dr Laurence Carvalho, Centre for Ecology and Hydrology, who will give a presentation on the EU Water Framework Directive with special reference to lakes and will describe their counting methods, and Guest Lecturer, Prof Emeritus Geoff Codd, University of Dundee, who will give a presentation on cyanobacterial toxins.

Who are the participants? The course is open to individuals with different backgrounds ranging from beginners to those who would like to refresh their knowledge of particular groups of algae or experience collecting in a different region of the world. Previous participants have come from over 35 different countries.

What is the full cost of the course? The course costs £490 per person (approx. 626€ or \$741), which includes shared occupancy accommodation (sole occupancy accommodation is £560) + all meals (please notify the Centre if you have any special dietary needs) + transport from/to Pitlochry and to field sites + use of the library and internet + tuition. Non-residents are charged £367. This is excellent value for money and costs significantly less than other freshwater algal courses on offer.

If you have any other queries, please contact: e.shubert@nhm.ac.uk

Prof Elliot Shubert
The Natural History Museum
Cromwell Road London SW7 5BD
United Kingdom

**Check out this link for more
information on this and
other courses!**

**[http://www.psaalgae.org/
workshops-and-courses/](http://www.psaalgae.org/workshops-and-courses/)**

DURHAM COURSES ON FRESHWATER ALGAL IDENTIFICATION

Van Mildert College and School of Biological and Biomedical Sciences, Durham University, Durham, UK - Organizers: Brian Whitton (Durham) and David John (London)

Introduction to Freshwater Algae

Sunday 28 June - Friday 3 July 2015

The course provides training for staff in water agencies, water companies, consultancies, research students and others in the identification of microscopic and macroscopic freshwater algae. The emphasis is on the more widespread and environmentally important organisms. Topics include methods of sampling, preservation, monitoring, harmful and nuisance algae. **Tutors** are Prof. Brian Whitton and Prof. David John; Drs Gordon Beakes (University of Newcastle), Alan Donaldson (consultant) and Martyn Kelly (Bowburn Consultancy) also contribute. **Inclusive cost** for participants other than full-time research students is £900 (no VAT charge) for those making a firm reservation by 1 May. The discounted price for students is £800. The fee covers absolutely everything, including excellent meals, while the College has its own lake..

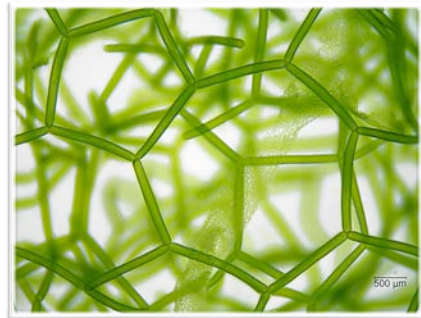


Advanced Course on Cyanobacteria (Blue-Green Algae) and Green Algae

Sunday 6 July - Thursday 9 July 2015

The course provides training on identification of freshwater cyanobacteria (blue-green algae) and green algae at a more advanced level than in the Introductory Course. It is planned especially for those who have attended one of the introductory courses, but also for others with considerable experience of field material or who would benefit by refreshing their knowledge. **Tutors** are Prof. Brian Whitton and Prof. David John; Dr Alan Donaldson (consultant) also helps.

Inclusive cost for all participants, other than research students, is £660 (no VAT charge) for those making a firm reservation by 1 May; no extra charge for those wanting to stay until after breakfast on 10 July. For those attending both introductory and advanced courses, bed and breakfast accommodation and some, but not all, meals, are provided free for the intermediate days between the courses. **Lectures/practicals** for both courses are in the School of Biological and Biomedical Sciences and usually run from 0900 until 2120, including Sunday evening. Most study is in the laboratory or seminar room, but there is at least one field visit on each course. Accommodation is in Van Mildert College, about 600 m from the laboratory.



For further information on the courses, see the BPS or PSA website or contact the course organizers

Brian Whitton b.a.whitton@durham.ac.uk phone +44(0)191-386-7504

David John d.john@nhm.ac.uk phone +44(0)208-464-6367 or +44(0)207-942-5078

Marine Algae - Friday Harbor Labs

To be taught at the University of Washington's Friday Harbor Labs, Friday Harbor, Washington (FHL 430, 9 credits at the University of Washington), offered during the A-term, June 15, 2015- July 17, 2015.

In this course, students will acquire practical experience in specimen collection, preservation, and databasing, light microscopy, DNA isolation, amplification and sequencing, and computational approaches to phylogeny reconstruction. Extensive field work will be enhanced by lectures as well as laboratory instruction in the observation and interpretation of morphological and anatomical traits that define species and/or higher taxonomic groups. The use of combined approaches will be emphasized to answer basic questions; individual and group projects will use morphological, ecological and molecular data to assess the diversity of algal populations and interpret that diversity in its ecological context. In addition to enhancing technical proficiencies in phycology, all participants will also gain practical experience communicating technical expertise to broader audiences through the production of a public outreach product.

See <http://depts.washington.edu/fhl/studentSummer2015.html> to find out more about application deadlines, tuition and opportunities to fund/defray costs to participate. For information on the Friday Harbor Labs: <http://depts.washington.edu/fhl/>

Contact the 2015 course instructors, Tom Mumford (tmumford@uw.edu) and Brian Wysor (bwysor@rwu.edu) to see how your research can integrate into course goals to further your own research while being part of what we hope to be a career-shaping experience studying the marine flora of the San Juan Islands.



Additional Information on these and other field courses can be found under the opportunities tab at the PSA website:

<http://www.psaalgae.org>

Check this site frequently as new courses are added in.

Also remember that the Croasdale Award is available to students that would like to take field courses. Check out the website or page 5 of this Newsletter!

WORKSHOPS

ATP³ Education and Training Workshops

ASU's Arizona Center for Algae Technology and Innovation (AzCATI) and UTEX, through the D.O.E-sponsored Algae Testbed Public-Private-Partnership (ATP³), offer comprehensive workshops on a diverse range of topics pertaining to the management and processing of microalgal cultures, and uses of their products. Laboratory and field training are led by highly-trained scientists and engineers. Seats are limited and filled on a first-come basis. Please visit ATP3.org to register.

Routine Measurement and Biochemical Analysis of Microalgal Cultures

March 9-13, 2015 @ AzCATI (Mesa, AZ)

This laboratory-intensive workshop was designed to provide an introduction to the observation and measurement of microalgal cultures and common analytical methods for the evaluation of biomass content. Topics presented are relevant to those interested in obtaining an overview in biochemistry, routine laboratory procedures, and data analysis. Field training will include handling and collecting cultures from ponds and photobioreactors. Participants will have ample opportunities to work in the laboratory and learn how to measure culture density (cell counting and optical density), observe algae with light and fluorescence microscopy, perform gravimetric analyses (wet weight, dry weight, ash-free dry weight, ash and moisture content), and experience techniques for extracting and analyzing biomass compounds, including bulk proteins, starch, carbohydrates and lipids. Cost \$1600 USD.

Principles and Processes: Algae Culture Maintenance, Production and Downstream Processing

May 11-15 @ NREL (Golden, CO)

This workshop covers the fundamentals of managing microalgae cultures, culturing techniques, measuring biomass, high-value natural products, harvesting and processing technologies, and operation at the production scale. Topics presented are relevant to those interested in obtaining a broad overview on the biology, growth and commercialization of microalgae. Workshop activities will take place at the National Renewable Energy Laboratory (NREL), where participants can explore every aspect of growing and processing microalgae. Cost \$1600 USD.

Microalgal Culture Management and Strain Selection

August 17-21, 2015 @ UTEX (UT-Austin, Texas)

This workshop will cover the fundamentals of isolating and identifying microalgae, handling and managing microalgal cultures (including methods for cryopreservation), screening strains for desirable characteristics, genetically improving strains, and analysis of lipids and higher-value products. Presentations and laboratory activities are designed for participants interested in the practical applications of algae, as well as advanced students and trainees who would like to obtain a comprehensive overview on the laboratory cultivation and analysis of microalgae. Workshop modules will include hands-on opportunities to collect field samples (bioprospecting), perform sample measurements, monitor cultures for contaminants, and analyze the chemical composition of algal biomass. Cost \$1600 USD.

ATP³ Education and Training Workshops continued

Large-Scale Algal Cultivation, Harvesting and Downstream Processing

November 9-13, 2015 at AzCATI (Mesa, AZ)

This workshop will cover practical applications and issues with growing and managing microalgal cultures at the production scale, including methods for handling cultures, screening strains for desirable characteristics, identifying and mitigating contaminants, scaling up cultures for outdoor growth, harvesting and processing technologies, and methods for the analysis of lipids, proteins and carbohydrates in biomass. Related laboratory and field training will include numerous hands-on opportunities for participants to collect and perform routine sample measurements, monitor cultures for contaminants, and evaluate the chemical composition of algal biomass. This workshop is ideal for those interested in obtaining a broad overview of the management of microalgal cultures at scale, and for advanced students and trainees interested in the practical applications of microalgae. Activities will be held at AzCATI, a nationally-recognized algae testbed facility, where participants can explore every aspect of growing microalgae at the production scale. Cost \$1600 USD.

UTEX Culture Collection of Algae Training Workshops

UTEX presents training workshops for individuals interested in learning principles and practices of growing and managing algal cultures. Many topics are relevant for those who are interested in commercialization of algae. The workshops feature presentations and demonstrations, as well as hands-on activities. Workshops are informal and participants are encouraged to ask questions, share information with the group, and network. Seats are limited and filled on a first-come basis. Please visit UTEX.org to register.

Bioprospecting, Isolation and Analysis of Microalgae

April 15-17, 2015 @ UTEX, UT-Austin

This three-day workshop was developed to provide an introduction to common laboratory techniques used for the analysis of microalgal biomass and biochemical content. Participants will have numerous opportunities to work in the laboratory observing cultures by microscopy, measuring cultures by spectrophotometry, performing gravimetric analyses, and bulk characterization of proteins, lipids and carbohydrates. Cost \$1000 USD.

Biochemistry and Laboratory Analysis of Biomass Composition

July 15-17, 2015 @ UTEX, UT-Austin

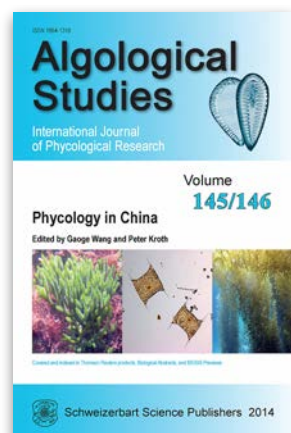
This three-day workshop was developed to provide an introduction to common laboratory techniques used for the analysis of microalgal biomass and biochemical content. Participants will have numerous opportunities to work in the laboratory observing cultures by microscopy, measuring cultures by spectrophotometry, performing gravimetric analyses, and bulk characterization of proteins, lipids and carbohydrates. Cost \$1000 USD.

Managing Microalgal Cultures

September 3-4, 2015 @ UTEX, UT-Austin

This two-day workshop is designed to enhance the knowledge of those who are already familiar with algae and provide an introduction to algal culture management for those with no prior experience. Topics are geared toward individuals who are interested in learning principles and practices of growing and managing algal cultures. Many topics are of direct relevance for those who are interested in commercialization of algae. Cost \$600 USD.

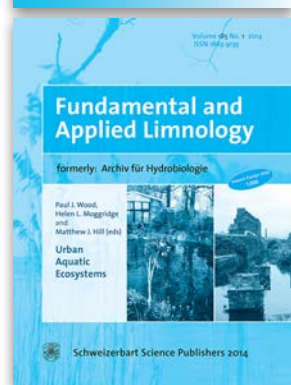
NOTICES OF NEW TITLES



Phycology in China

Edited by Gaoge Wang; Peter Kroth
2014. 197 pages, 55 figures, 22 tables
(Algological Studies, Volume 145/146)
OrderNo. ES221014500, paperback, 189.00 €

http://www.schweizerbart.de/papers/algol_stud/list/145-146



Special Issue: Urban Aquatic Ecosystems

Edited by Paul J. Wood; Helen L. Moggridge; Matthew J. Hill
2014. 119 pages, 47 figures, 22 tables
(Fundamental and Applied Limnology, Vol. 185, No.1)
ArtNo. ES141018501, paperback, 110.00 €

<http://www.schweizerbart.de/papers/fal/list/185#issue1>

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The Biology and Ecology of Giant Kelp Forests

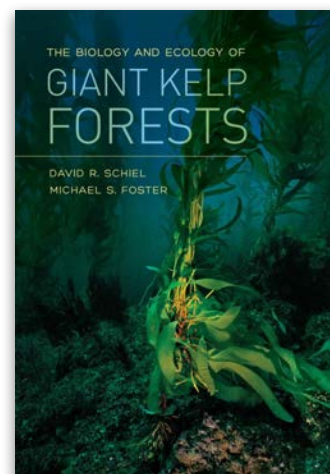
David R. Schiel (Author), Michael S. Foster (Author)

Available worldwide, Hardcover, 408 pages

ISBN: 9780520278868, May 2015

\$75.00, £52.00

Giant kelp (*Macrocystis*) is a remarkable plant, the largest seaweed and most rapidly growing and prolific of all plants found on earth. Growing from the seafloor and extending along the sea surface in lush canopies, giant kelp provides an extensive vertical habitat in a largely two-dimensional seascape. It is the foundation for one of the most species-rich, productive, and widely distributed ecological communities. Schiel and Foster's scholarly review and synthesis take the reader from the early observations by Darwin to the present day, providing a historical perspective for the modern understanding of giant kelp evolution, biogeography, biology, and physiology. This perspective is integrated into a thorough discussion of the species and forest ecology worldwide, with considerations of human uses and abuses, management and conservation, and the present effects of global change and likely future impacts. This volume promises to be the definitive treatise and reference on giant kelp and its forests for many years, and it will appeal to marine scientists and others who want a better appreciation and understanding of these wondrous forests of the sea.



Giant kelp (*Macrocystis*) is a remarkable plant, the largest seaweed and most rapidly growing and prolific of all plants found on earth. Growing from the seafloor and extending along the sea surface in lush canopies, giant kelp provides an extensive vertical habitat in a largely two-dimensional seascape. It is the foundation for one of the most species-rich, productive, and widely distributed ecological communities. Schiel and Foster's scholarly review and synthesis take the reader from the early observations by Darwin to the present day, providing a historical perspective for the modern understanding of giant kelp evolution, biogeography, biology, and physiology. This perspective is integrated into a thorough discussion of the species and forest ecology worldwide, with considerations of human uses and abuses, management and conservation, and the present effects of global change and likely future impacts. This volume promises to be the definitive treatise and reference on giant kelp and its forests for many years, and it will appeal to marine scientists and others who want a better appreciation and understanding of these wondrous forests of the sea.

NOTICES OF NEW TITLES

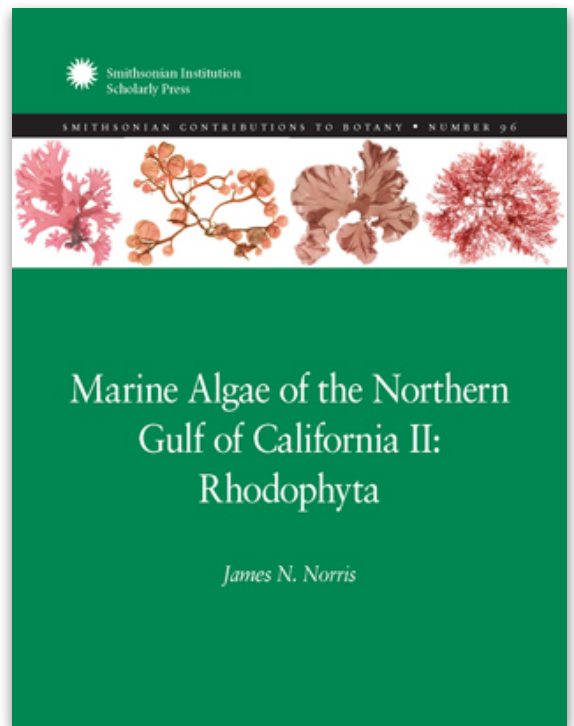
James N. Norris: “Marine Algae of the Northern Gulf of California II: Rhodophyta”. Smithsonian Contributions to Botany, No. 96. [i]-xvi + [1]-555 pp., 236 figs. Smithsonian Institution Scholarly Press, Washington, D.C.

ISBN: (print) 0081-024X; and (online) 1938-2812; doi 10.5479/si.19382812.96.

Both the online (e-publication) and printed versions were published on Nov. 14, 2014. Links to access and download the free searchable PDF are available on the following sites of the Smithsonian Institution Scholarly Press: the [Open SI](#) publishing portal/archive; and the [SISP website](#) both feature the book. The digital publication is also available to download at: <http://www.scholarlypress.si.edu/>

The publication is being distributed to all libraries on Smithsonian distribution list. A limited number of printed copies will be available free upon request from SI Scholarly Press.

The present treatment constitutes a taxonomic study of the benthic marine red algae known in the northern Gulf of California. In all, 387 species of Rhodophyta belonging to two subphyla were found: the Rhodophytina, represented by 2 classes, 2 orders, 2 families, 7 genera, and 14 species; and Eurhodophytina, represented by 2 classes, 5 subclasses, 19 orders, 47 families, 133 genera, and 373 species (including varieties, forms, and possible new species); 71 species of red algae (~18%) are endemic to the Gulf of California. A new genus, 1 new subgeneric section, and 8 new species are described; 30 new combinations are proposed.



NEWS FROM COLLEAGUES

Coded List of Freshwater Algae of Britain and Ireland has been updated and can now be downloaded from the Centre for Ecology and Hydrology website

http://www.ceh.ac.uk/news/news_archive/update-coded-list-freshwater-algae-britain-ireland-2014-68.html.

This version, completed in November 2014, updates the 2003 version (with the exception of diatoms) and includes many taxonomic and nomenclatural changes as well as new records of freshwater and terrestrial cyanobacteria and photosynthetic algae. It is a complete listing of all the currently accepted records of British non-marine algae other than diatoms. Also included are brackish water and intertidal cyanobacteria, since a few occur in freshwater and marine environments. Both new and old numbers are given where nomenclatural changes or taxonomic transfers have required a number change. The Check List provides the only numerical system for freshwater and terrestrial algal records in which an 8-digit number relates directly to the taxonomic system, as opposed to an arbitrary number in a continuous list as used in some other recording systems.

The Coded List is downloadable as an Excel spreadsheet and the bibliography as a PDF file.

Compilers:

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David M John: Life Sciences Department, Genomics and Microbiology Division, Natural History Museum, Cromwell Road, London SW7 5BD, UK d.john@nhm.ac.uk

List prepared for publication by C Isabella Tindall: Centre for Ecology & Hydrology, Crowmarsh Gifford, Wallingford, Oxon, OX10 8BB, UK

Centre for Ecology & Hydrology
NATURAL ENVIRONMENT RESEARCH COUNCIL

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Algae main page
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Coded List of Freshwater Algae of Britain and Ireland 2014

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Main Features

This list includes all reliable records up to November 2014 of freshwater and terrestrial cyanobacteria and photosynthetic algae in the British Isles with the exception of some diatoms. Brackish water and intertidal cyanobacteria are also included, because a few species have been recorded from both freshwater and marine environments. The list is the fifth update of one prepared originally for the then Water Data Unit of the (UK) Department of the Environment in 1978. It incorporates the many taxonomic and nomenclatural changes and new species records since the previous version in 2003. Some of these changes are mentioned and explained in the second edition of *The Freshwater Algal Flora of the British Isles* (John et al 2011).

University of Alabama Herbarium (UNA) Algae Collection: An Overview

By Kevan Schoonover, Charles T. Mohr Intern at the University of North Carolina Herbarium (NCU), North Carolina Botanical Garden, University of North Carolina at Chapel Hill. schooner@live.unc.edu



In 2013 the National Science Foundation awarded several grants to advance digitization of biodiversity collections. One of the Thematic Collections Networks (TCN) funded was *The Macroalgal Herbarium Consortium: Accessing 150 Years of Specimen Data to Understand Changes in the Marine/Aquatic Environment*. Forty-nine herbaria are members of this Consortium, and the specimens cataloged are available to the public and researchers at macroalgae.org. Researchers should contact Dr. Juan Lopez-Bautista, Curator of Algae at UNA, and Mr. Steve Ginzburg, Collections Manager at UNA, for loans.

The University of North Carolina Herbarium (NCU) is a regional hub for the Macroalgal Consortium, and in addition to cataloging our own phycological collection, we are imaging and databasing collections belonging to six other herbaria (FLAS, LSU, TAES, UNA, USCH, and WNC). UNA's algae collection is diverse for its size. Totalling 1,608 specimens (as of December 17, 2014), the collection covers 69 families and includes collections from ten countries on four continents. The collection spans 90 years, with the newest specimen being from 2009 and the oldest being from 1919. About 30 people contributed specimens to the collection, however the vast majority of specimens (972) have no collector identified, so were attributed to Anonymous in the macroalgae.org database.

The majority of the UNA algae are from the United States, although there are some from other countries as well. The collection covers four continents: North America, South America, Africa, and Europe. The countries included are The United States (1534), Nicaragua (1), Panama (20), Brazil (1), French Guyana (21), Chile (1), Gabon (14), Italy (3), Spain (1), and Portugal (1). Of the United States specimens, most algae are from the Gulf of Mexico and the Florida Middlegrounds (a coral reef of the western coast of Florida), totalling 1,235 specimens. Another area of major collecting was Woods Hole, Massachusetts and environs, totalling 246 species.

The specimens from the Gulf of Mexico and the Florida Middlegrounds were primarily collected for the MAFLA (Mississippi-Alabama-Florida) Outer Continental Shelf Baseline Environmental Survey cruises from 1974 to 1978 by the Bureau of Land Management (the final report is here: <http://invertebrates.si.edu/boem/reports/MAFLA%20final%20report.pdf>). Most of these specimens do not have any collector identified. However, these specimens do contain the stations where they were collected, though some have discrepancies. These specimens need annotations to reflect the correct latitude and longitude according to the table provided in the MAFLA Final Report (pages 23-29). Other specimens collected from the Gulf of Mexico and the Florida Middlegrounds (which did have collectors identified) were collected for two other studies. One of the studies was the *Northern Gulf of Mexico Topographic Features Study* (1978-1979), for which Thomas S. "Tom" Hopkins was the main collector. The algal part of the study is included in the Final Report Volume 5 (available here: <http://www.data.boem.gov/PI/PDFImages/ESPIS/3/4017.pdf>). Other collectors associated with this report are Sylvia Earle, Eric H. Livingston, and Jay A. Shapiro. These collectors were also members of another project, *A Preliminary Characterization of the Biotic Components of Composite Reef Transects on the Florida Middlegrounds, Northeastern Gulf of Mexico* (1977) (available here: http://www.reefbase.org/resource_center/publication/icrs.aspx?icrs=ICRS3). Other collectors associated with this report are Diane E. Grimm, Charles H. Lutz, Deborah R. Blizzard, and Susan Brawley.

**Submit your contributions to the next
Phycological Newsletter by Aug. 15, 2015**

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:

www.psaalgae.org

Please forward this information to

Kirsten M. Müller

kirsten.muller@uwaterloo.ca

A big thanks to Mike Wynne for his valuable feedback and editing on this newsletter!

