

SUMMER/  
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# PHYCOLOGICAL NEWSLETTER



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## CONTENTS

**p. 1:** Message from the  
PSA President

**p. 3:** PSA 2012 and other  
Phycological Awards

**p. 7:** PSA 2012  
Highlights

**p. 9:** Upcoming  
Conferences

**p. 12:** Student  
Fellowship & Award  
Deadlines

**p. 14:** PSA  
Developments: PSA  
committees report their  
activities

**p. 20:** Obituary of Dr.  
Eugene Stoermer

**p. 21:** Phycological  
Trailblazer, No. 37:

**p. 27:** Minutes of the 2012  
Business Meeting

**p. 30:** News from  
Colleagues

**p. 32:** New Books and  
Upcoming Newsletter  
Deadline

## MESSAGE FROM PSA PRESIDENT JUAN BAUPTISTA-LOPEZ

### GREETINGS!

It was great to see you at the Annual Meeting of the PSA in beautiful Charleston, SC. The meeting was well attended by members that participated in a broad variety of topics and events. Our Program Director, Dale Casamatta, our local organizer, Frances van Dolah, and the 2012 Organizing Committee, did an excellent job before and during the organization of our meeting. This year was particularly challenging because the original venue for our meeting, The College of Charleston, was cancelled due to last-minute construction on campus. The Francis Marion Hotel proved to be a useful venue for many reasons. The conference, meetings, and workshop areas were comfortable, and the hotel location was ideal for a quick stroll to many places in the heart of downtown Charleston. This was especially practical at lunch or dinnertime. Reid Wiseman was very helpful by leading several field trips, even adding a new one after the meeting. The diverse symposia, including the Red Algal Phylogenomics, Bioassessment of Freshwater Ecosystems in the 21<sup>st</sup> Century, Algal/Viral interactions, and the Molecular Insights into the Ecology and Physiology of Harmful Algal Blooms, received stellar reviews by our colleagues due to their top scientific quality. Our long-term PSA Archivist Bruce Parker reminded us about our phycological history by presenting a special display "Early American Phycologists and their Indispensable Tool –The Light Microscope". Workshops and discussion panels are becoming one of our major attractions with workshops filling up quite rapidly (Plan in advance for next year). These included the Genomic Techniques, the RedToL, and the NSF/Career Panel. A big "Thank you" also goes to our retiring Treasurer Chuck Delwiche for all his years of service. Our newly elected Treasurer, Eric Linton, will take over on January 1<sup>st</sup> 2013. As you may know, John Stiller is our Vice-President/President-Elect for 2013. Linda Graham will become our President in 2013. More information about our Business Meeting can be found in this edition of our Newsletter.



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The first PSA “Phirst Phyco Philm Phest”, organized by Rick McCourt, was highly entertaining, informative and provided a brief relief from an intensive scientific schedule. And talking about fun, the PSA Auction was also a great success and allowed us to amass funds to continue the support of student participation at PSA. Our final social gathering was an event to remember. Having the wonderful South Carolina Aquarium with the Charleston Harbor as a background, the banquet and award ceremony were a fitting closing for the meeting. For this year’s meeting the number of students exceeded (ca. 55%) the number of regular members. This ratio is encouraging because it indicates that the number of budding phycologists is growing and bodes well for the future of our Society.

Your Society is participating in outreach events with the goal to introduce the world of algae to the general public. In this issue you will read about the participation of our members in the USA Science and Engineering Festival (April 2012). You will also find other ways to participate for the PSA in other outreach events such as the AAAS meeting (Feb. 2013).

Have you received your new issue of *JPHYCOL*? Let me just say that it was an exciting experience to see the new issue! After my visual delight, a quick examination of the new format surpassed all my expectations. The quality of the research and the publication is at its best. The new system consists of four co-editors: Michael Graham, Debashish Bhattacharya, Arthur Grossman, and Jonathan Zehr, who collectively are aiming to improve the quality and impact of the journal while speeding up the publication process. Congratulations to the team of editors!

Serving in one of the PSA Committees is a way to help your society. If you wish to participate in any of the committees, please contact the Chair of the committee ([www.psaalgae.org](http://www.psaalgae.org)). Another way to participate at PSA is through our social website in Facebook page, PSA Algae. There is always interesting news and activities posted in our social web presence. I reiterate my request to each member of the PSA to “bring a buddy along”, your help inviting and bringing another member (especially students) into our society will provide a tremendous help for the future, strength and overall quality.

How can we improve? If you have ideas or suggestions to improve our society please let me know ([jlopez@ua.edu](mailto:jlopez@ua.edu)), our President-elect Linda Graham ([lgraham@wisc.edu](mailto:lgraham@wisc.edu)), or any member of the PSA committees. We are here to serve our members aiming for a better PSA.

I recently had the opportunity to visit some colleagues in China (July 27-August 2). This was a chance to do some outreach on the name of the PSA in order to reach out to our Chinese colleagues, especially graduate students. My host, Dr. DeLin Duan (Ecology and Algal Farming) at the Institute of Oceanology Chinese Academy of Sciences (IOCAS), graciously organized my visit to meet phycologists not only at IOCAS but also at the Ocean University of China (OUC), both located in Qingdao, as well as a visit to the Institute of Botany (IB-CAS) in Beijing.

At the IB-CAS (<http://english.ib.cas.cn>) I had the opportunity to visit their herbarium, the largest in Asia, located in a six-story building just outside the Beijing center and close to the Beijing Botanical Garden. At IB-CAS my host, Dr. Honzhi Kong, introduced me during a general talk about Algal Systematics that was the background to a stimulating discussion with graduate students followed by a traditional Chinese meal (the first of many!). Part of our discussion was the opportunities at PSA for student memberships, our PSA bookmarks were distributed and one PSA Algal DVD was given to the Institute for general use.



Juan Lopez-Bautista and ZiMin Hu (UA postdoc) at the entrance of the Institute of Botany IB-CAS, Beijing

## AWARDEES HONORED AT THE 2012 PSA MEETING

### The PSA Award of Excellence (highest honor of the Society):

At the banquet of the June meetings in Charleston, South Carolina, President Juan Lopez-Bautista announced that this year's "Award of Excellence" is being presented to Drs Jeanine Olsen and Wytse Stam of the University of Gröningen, The Netherlands, for their sustained excellence in algal research. The nomination letter and supporting letters were glowing in their praise of these two investigators and highlighted the importance of their work over very productive careers.



**Drs Jeanine Olsen and Wytse Stam with their PSA Award of Excellence in Charleston, South Carolina.**

#### From Dr. Frederick Zechman:

*Their diverse and pioneering research with well over 100 papers bearing their names, their sustained and extensive editorial and executive service to the four major phycological societies (especially PSA), and their 30 and 40 years experience, respectively, in teaching and mentoring numerous students and research associates is evidence of their important contributions to the field of phycology*

#### From Dr. Olivier De Clerk:

*Second, and the main reason to support this nomination, Jeanine Olsen and Wytse Stam were 'miles ahead' of everyone else in phycology, not just in 1994 but also 5 years earlier when they started playing around with DNA-DNA hybridization, or 10 years earlier using immunological data to study relationships in the Siphonocladales..... I've used the term 'miles ahead' intentionally. Just like the trumpet player, Jeanine Olsen and Wytse Stam didn't follow any trend, they created trends.*

#### From Dr. W. F. Prud'homme van Reine

*During the 1st ten years of the 21st era, they formed the nucleus of a fine evolutionary plant research lab with an emphasis on marine macroscopical organisms, resulting in many exciting papers and good phycological education for many young scientists who were made enthusiastic to do phycology in many parts of the world. In my opinion these two excellent phycologists merit a reward of excellence for their continuous enthusiasm for taxonomic phycology in many different facets, for education of phycologists and for their social and helpful behavior.*

## PSA AWARDEES CONTINUED...

### 2012 LUIGI PROVASOLI AWARD WINNERS

Mike Graham, Managing Editor of the Society's Journal of Phycology, announced this years co-recipients of the Luigi Provasoli Award for the best paper published in the journal in 2011.

J.E. Sutherland, S. C. Lindstrom, W. A. Nelson, J. Brodie, M. D. Lynch, M. S. Hwang, H.-G. Choi, M. Miyata, N. Kikuchi, M. C. Oliveira, T. Farr, C. Neefus, A. Mols-Mortensen, D. Milstein and K. M. Müller for their paper "A new look at an ancient order: generic revision of the Bangiales (Rhodophyta)". [J. Phycology 47: 1131-1151].

**1st co-recipients of Provasoli Award:**  
front row: Kristen Müller, Mariana Oliveira and Judy Sutherland;  
back row: Chris Neefus, Masahiko Miyata.



M. Ichinomiya, S. Yoshikawa, M. Kamiya, K. Ohki, S. Takaichi & A. Kuwata for their paper "Isolation and characterization of Parmales (Heterokonta/Heterokontophyta/Stramenopiles) from the Oyahio region, western North Pacific. [J. Phycology 47: 144-151].

**2nd co-recipients of Provasoli Award:**  
Akira Kuwata being presented the  
award by Mike Graham.



## PSA AWARDEES CONTINUED...

### 2012 BOLD AND LEWIN AWARD WINNERS

Paul Gabrielson, chair of the selection committee for both the Harold C. Bold Award (for the best student oral presentation) and the Ralph A. Lewin Award (for the best student poster), announced at the PSA banquet that the committee decided to present the Bold Award to two outstanding students.

1st Student: **Emily T. Johnston of Ohio University, Athens, OH**, for the talk "The systematics and biogeography of the Thoreaales, a freshwater red algal order" (with co-authors N. Buhari, I. Djawad & M. L. Vis).

2nd Student: **Jennifer H. Wisecaver of the University of Arizona**, for the talk "Horizontal gene transfer is a significant driver of gene innovation in dinoflagellates" (with co-author J. D. Hackett).

Paul Gabrielson then announced this year's recipient of the Ralph A. Lewin Poster Award.

Ying Yang of Worcester Polytechnic Institute, MA, for the poster: "Effects of light intensity and temperature on **Ettlia oleobundans**: balancing biomass with lipid yield and quality" (with co-authors B. Mininberg, A. Tarbet and P. J. Weathers).

**Bold and Lewin Award recipients:** Paul Gabrielson (Chair of selection committee), Emily Johnston, Jennifer Wisecaver, Ying Yang, and President Juan Lopez-Bautista.



## OTHER AWARDS

**2012 Darbaker Prize** (Botanical Society of America prize for meritorious work on microscopic algae; a PSA Committee determined awardee at BSA's request).

This prize is given each year in memory of Dr. Leasure K. Darbaker and is given to a resident of North America for meritorious work in the study of microscopic algae based on papers published in English by the nominee during the last two full calendar years. For 2012 the Darbaker Prize has been presented to two recipients:

**1st recipient: Dr. Walter Adey**, National Museum of Natural History, Smithsonian Institution. Dr. Adey has been a pioneer of modern phycology. His development of modern coralline taxonomy and the structural analysis have provided the underpinnings for our present understanding of this group that is now being enhanced by molecular methods. He has further pioneered the system of using filamentous algae as scrubbers toward clean water production and biofuels generation. For more than fifty years, Dr. Adey has been publishing on his research based in the western North Atlantic from the Labrador Sea to the Florida Keys, the Caribbean, from the Barents Sea to Portugal and Italy, from the coast of Hokkaido, Japan, and the Gulf of Maine, often being Captain of his own hand-built research vessels, such as his latest, the "ALCA i", his three-masted 64-foot schooner, built as a scuba-support vessel and floating laboratory.



**Dr. Sabeeha Merchant**,  
University of California at Los Angeles.

**Dr. Walter Adey**  
National Museum of  
Natural History,  
Smithsonian Institution.



**2nd recipient: Dr. Sabeena merchant**, UNIVERSITY OF CALIFORNIA AT LOS ANGELES. Dr. Merchant has been instrumental in developing the genetics and genomics of *Chlamydomonas* as a model organism. Her work has elucidated the role of metabolic cofactors and iron and copper utilization in the biogenesis of the photosynthetic apparatus, thus providing the basic understanding of chloroplast development for green algae and plants. Dr. Merchant was a recipient of the Gilbert Morgan Smith Medal from the National Academy of Sciences in 2006 "for her pioneering discoveries in the assembly of metalloenzymes and the regulated biogenesis of major complexes of the photosynthetic apparatus in green algae." She was elected to the National Academy of Sciences in May of this year.

## 2012 PSA CONFERENCE HIGHLIGHTS



Retiring Treasurer Chuck Delwiche with President Juan Lopez-Bautista. Thank you so much, Chuck, for all your years of service!

Gareth Belton (center) and Rainbo Dixon (right) came all the way from Australia to attend the meetings, both presenting papers in the Bold Award competition.



**Past and Present PSA Presidents at the 2012 PSA Conference Banquet in Charleston SC:**

From left to right, Larry Liddle, Bob Andersen, Susan Brawley, Mike Wynne, Morgan Vis, Chuck Amsler, Juan Lopez-Bautista, Russell L. Chapman and Michelle Wood.

# 2012 PSA CONFERENCE HIGHLIGHTS CONT....

Various  
Folks at  
the Banquet





## 2012 PSA CONFERENCE HIGHLIGHTS, CONT....



Jessica Muhlin enjoys a delicious chowder at The Grocery in Charleston, SC.

Chef Kevin Johnson of **The Grocery** (4 Cannon St., Charleston) added sea vegetables to his menu during the PSA's June meeting in Charleston. The Grocery on "upper King" (see *Southern Living* magazine, July 2012, p. 20) "features ingredients from our favorite farmers, fishermen, foragers, and artisans". The accompanying photo shows Education Committee Chair Jessica Muhlin about to dip into the delicious chowder (wood roasted clams with turnips and dulse [*Palmaria palmata*]) that Chef Johnson developed for The Grocery's June menu. Many settlers of Charleston would have eaten dulse in France, Ireland, and Great Britain, so there was a historical note to the menu.

The PSA meets in a variety of locations across North America; this type of outreach to local chefs by the Program Committee is one of the ways we can benefit our host cities while providing interesting dining options for members during the annual meeting and increasing North American sea vegetable cuisine. This contact for PSA was made by the Editor of *Southern Living*, Mr. Lindsay Bierman and Features Editor, Ms. Jennifer Cole.

– Susan H. Brawley

## Upcoming Conferences

Greetings and Salutations! Have you been dreaming of a phycological opportunity to get you through the fall semester? If so, this is your lucky day, as we are pleased to announce the upcoming **34<sup>th</sup> Southeastern Phycological Colloquy** to be held **October 20<sup>th</sup>**, at the University of North Florida (Jacksonville, FL). This meeting is designed to explore the myriad facets of phycology in an informal setting, and thus student participation, both undergraduate and graduate, is strongly encouraged. Presentations on seagrasses and other SAV are most certainly welcomed as well. As an added bonus, as if any such thing were necessary, we are pleased to announce that this meeting will be concurrent with the annual Southeastern Estuarine Research Society Conference.

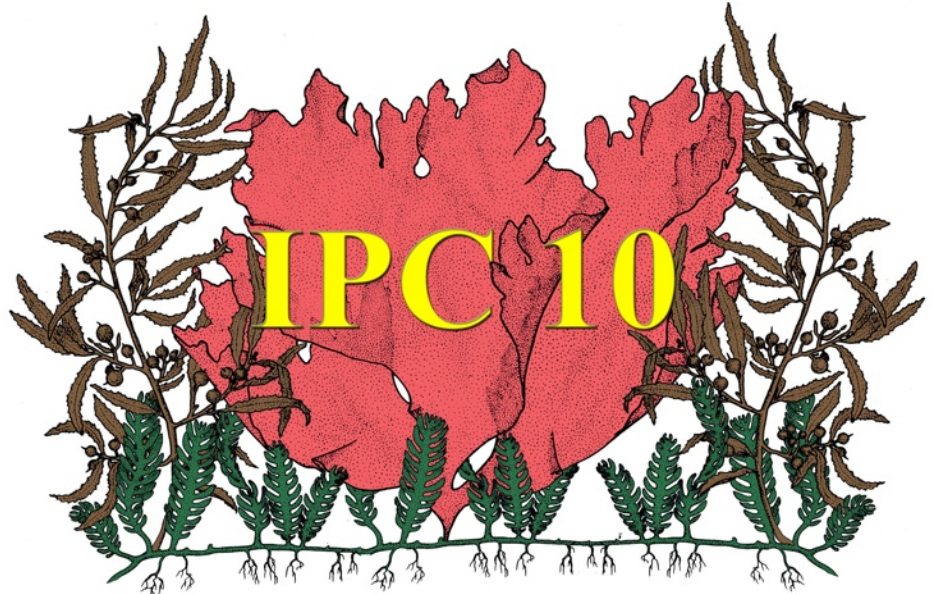
For additional information and registration materials please visit:

[www.unf.edu/coas/biology/faculty/SEPC\\_2012.aspx](http://www.unf.edu/coas/biology/faculty/SEPC_2012.aspx)

Cliff Ross ([cliff.ross@unf.edu](mailto:cliff.ross@unf.edu)) and Dale Casamatta ([dcasamat@unf.edu](mailto:dcasamat@unf.edu)), Co-conveners

# Joint Conference of the PSA and the IPC

Phycologists and others interested in the algae from throughout the world are invited to participate in the **10<sup>th</sup> International Phycological Congress** (IPC 10) in Orlando, Florida, 4 (Sunday) - 10 (Saturday) August 2013. This Congress continues in a tradition that began in 1982 at the first IPC in St. Johns, Newfoundland, Canada. The



**10<sup>TH</sup> INTERNATIONAL PHYCOLOGICAL CONGRESS  
4-10 AUGUST 2013, ORLANDO, FLORIDA USA**

The overarching theme of IPC 10, *Algae in a Changing World*, recognizes the important roles of algae in a world where environmental changes are rapidly accelerating. Ultimate sponsorship of these Congresses is provided by the International Phycological Society (IPS; <http://www.intphycsoc.org/>). Societies other than the IPS have met in conjunction with most IPCs to date. The **Phycological Society of America** (PSA; <http://www.psaalgae.org/>) has committed to meet in conjunction with IPC 10. We welcome other phycological societies interested in meeting under the auspices of the IPC in 2013 to contact one of the conveners.

Also, in 2013, Florida will be the first state in the USA to celebrate the 500th, or Quincentennial, Anniversary of its discovery by Europeans and its naming (by Spanish explorer Ponce de Leon). We encourage delegates to consider IPC 10 in Orlando not only an excellent opportunity to participate in a great international scientific meeting, but also an occasion for a wonderful vacation/holiday for the delegates and their families. All social events at the Congress will include family members, and arrangements for day-care services will be made for those who need it.

The **first Congress Circular** for IPC 10 is posted on the IPS (<http://www.intphycsoc.org/congresses.php>) and PSA (<http://www.psaalgae.org/website/opportunities/IPC10FC.pdf>) websites. Additional details on program (Plenary Lectures, Symposia, Workshops) and logistics will be announced in the Second Congress Circular which will be issued in November 2012.

We look forward to a fun and productive Congress in 2013!

IPC 10 Local Organizing Committee:

Conveners: Dr. M. Dennis Hanisak (Harbor Branch Oceanographic Institute at Florida Atlantic University) and Dr. Akshinthala K.S.K. Prasad (Florida State University); Other Members of the Local Organizing Committee: Dr. Charles D. Amsler (University of Alabama at Birmingham), Dr. Russell L. Chapman (Louisiana State University), Dr. James A. Nienow (Valdosta State University), and Dr. Linda Walters (University of Central Florida)

# 5th Congress of the International Society for Applied Phycology 2014



## Strengthening algal industries for the future: key knowledge and skills gaps

**Australia Technology Park, Sydney, Sunday 22 - Friday 27 June 2014**

[www.isap2014.com](http://www.isap2014.com)

As President of the International Society for Applied Phycology and Convenor of the conference, we are delighted to invite you to the 5th Congress of the International Society for Applied Phycology - ISAP 2014 - in Sydney, Australia.

Historically, Australia has been a leader in algal applications and currently there are many exciting research and industrial developments in algal applications happening in Australia. International interest in algal applications in Australia is strong due to our unique algal biodiversity, landscape and biogeography that lend itself to algal industry development. ISAP 2014 in Sydney will give researchers and industry representatives a wonderful opportunity to learn more of Australia's algal potential as well as to share the global achievements and future directions in this vibrant frontier at this inspiring global venue.

**Susan Blackburn & Pia Winberg**, President & Convenor of ISAP 2014

### ***Proposed Conference Themes***

- Advances in biofuels - status, collaboration, multidisciplinary approaches, achieving market diversity, current impediments
- Health & Nutrition - multidisciplinary approaches
- Commercialisation & business development
- Agricultural applications - benefits, economics and scale
- Developing Nations - harnessing resources and value adding the future
- Industrialised Nations - realising the dream
- Phycological Networks – alignment, services and membership
- Novel Industries – polymer and nanotechnology research and applications
- Industry showcase session - the latest phycological technological equipment



## The NSF Graduate Research Fellowship

Nearly 60 years ago, right after the National Science Foundation was founded and began funding research and education in colleges and universities across the country, one of the first NSF programs developed was for support of graduate students. The [Graduate Research Fellowship Program](#) was designed to foster the careers of young scientists and to attract the best and brightest students into careers in science. Now, 60 years later, some 46,500 men and women have had their careers benefit from receiving this prestigious award. And yes, as an under-graduate or beginning graduate student in psychology, or as a faculty mentor of a student with an interest in psychology, the GRF is something you should know about.

I've just returned to my home institution, the Academy of Natural Sciences, after spending two years as a Program Director in the [Division of Graduate Education](#) at NSF, where I helped manage the Graduate Research Fellowship Program. It's a unique program that gives Fellowships directly to graduate students early in their careers and provides them with three years of stipend and tuition support, which they can use in any NSF-supported field at the institutions of their choice. Interested? This article provides a snapshot of the program. For complete details, consult the [NSF web site](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6201) at [http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=6201](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=6201).

Before a student applies, he or she should know that the GRF has strict eligibility requirements. First, you must be a citizen or permanent resident of the US. Second, you can only apply during a

certain time frame early in your studies: as a senior in college or as a graduate with a bachelor's degree; as a first year graduate student; or as a second year graduate student in the fall. As you can see, the GRF aims to support new and beginning graduate students. The exception to this requirement is if you have completed more than one year of graduate school but had to leave school for at least two years; in that case you may apply, and you are asked to supply a short essay describing your situation. There are also certain things that render you ineligible: (1) if you have any graduate degree in any area (M.S., M.D., J.D., M.B.A., etc.), (2) if your graduate studies are in a field not supported by NSF (disease-related clinical studies, history, etc.).

The application process is roughly equivalent to applying to many graduate schools. The online [GRFP FastLane application site](https://www.fastlane.nsf.gov/grfp/Login.do) (<https://www.fastlane.nsf.gov/grfp/Login.do>) is where applicants enter their academic information,

intended field of study and institution, transcripts, letters of recommendation, and three essays of up to two pages each detailing personal history, previous research experience, and proposed research. Online

applications are submitted in November (due date varies by field of study, so consult the NSF web site for details), and in early spring applicants receive notice if they're one of the GRF awardees (2,000 per year from a pool of over 12,000 applications) or one of the Honorable Mentions (approximately another 2,000). Either way, graduate schools take notice, and lists of awardees and Honorable Mentions are carefully watched by graduate admissions committees to find top candidates for graduate study.

*Now, 60 years later, some 46,500 men and women have had their careers benefit from receiving this prestigious award.*

## NSF Fellowships, continued.

What do you get as a Graduate Research Fellow? The GRF is an award to you, the graduate student, administered by the university where you are enrolled. Fellows receive **three years stipend** that they can spread out over a five-year period (two years without stipend are called reserve years). The stipend is currently \$30,000 per year. Moreover, for you the student, your tuition is covered for the years you are on stipend. Your institution receives a cost of education allowance of \$12,000 that it uses at its own discretion--usually to offset your tuition and fees. Fellows also have opportunities to take part in NSF-supported programs in international research.

Beyond the numbers and prestige, the GRF also gives you something that other common forms of graduate support--research and teaching assistantships--do not: **Freedom**. Freedom to use the GRF at the school of your choice, and freedom to pursue ideas in your chosen field, for three years, without any other duties. It could be the only time you experience such freedom in your academic life.

In return, you are expected to remain a full-time graduate student in good standing at your institution, file an annual activities report with NSF, and inform the GRF Program each year as to your preference to receive the stipend and cost of

education allowance, or to utilize one of your two reserve years.

In its 60 year history the GRF Program has supported some incredible people--some 30 Nobel Laureates, more than 400 members of the National Academy of Sciences, and thousands of other scientists and educators. Fellows include Paul Krugman, the Nobel-Prize winning economist; Sergei Brin, the graduate school dropout who co-founded Google; E. O. Wilson, the evolutionary biologist; and many others. Could you or your student be one of them?

*Rick McCourt*

*Academy of Natural Sciences, Philadelphia  
Former NSF Program Director, 2010-12,  
Division of Graduate Education*

*For additional information on the GRFP,  
visit*

<http://www.nsfgrfp.org/>

Note: This material is based upon work during RMM's employment at the National Science Foundation. Any opinion, findings, conclusions or recommendations expressed in this material are those of the author and do not necessarily reflect the views of the National Science Foundation.

## PSA Student Grants and Fellowships:

Each year over \$25,000 is awarded to support student members in furthering their research (Grants-in-Aid of Research), education (Croasdale Fellowship), and travel to the annual PSA meeting (Hoshaw Travel Award). Competition for these awards is high, so the committee recommends that students have their advisors review their application before submission. Also, the committee would like to remind applicants that all incomplete (i.e. not addressing all of the required points of each award, missing letter(s) of recommendation) or late applications will not be reviewed. The deadline and requirements for each award application is listed on the PSA website: <<http://www.psaalgae.org/website/opportunities/grants.html>>. The committee looks forward to reviewing more great applications this year!

The committee is always looking for new members so please let the chair, Amy Carlile <[acarlile@newhaven.edu](mailto:acarlile@newhaven.edu)> (new chair this year, taking over from Eric Linton), know if you would like to serve.

**Grant-In-Aid of Research Deadline: November 1, 2012**



# USA SCIENCE AND ENGINEERING FESTIVAL

## Do you like candy bars? Introducing algae to the public at the Science and Engineering Festival.

Disseminating information to the general public about the sciences in an effective and clear manner is an important and sometimes challenging task. How can we make science relatable to children and those in other professions? The members of the Phycological Society of America, under the organizational leadership of Drs. Walter Adey, Charles Yarish and Susan Brawley, did an excellent job at our booth during the USA Science and Engineering Festival 2012.

The 2012 Science and Engineering Festival's mission was to "re-invigorate the interest of our nation's youth in science, technology, engineering and math (STEM) by producing and presenting the most compelling, exciting, educational and entertaining science festival in the United States" (USA Science and Engineering Festival 2012). Hosted by Lockheed Martin, the festival took place on April 28 - 29, 2012 at the Walter E. Washington Convention Center in Washington, D.C. A collaboration of over 500 leading science and engineering organizations, the event featured a book fair, a career pavilion, over 3000 exhibits and stage demonstrations, and appearances by science celebrities such as



## PSA's information booth at the Festival

The booth's attractions included banners, a hands-on display, and a video screening. Banners illustrated the importance of algae to our daily lives and their place in the natural world, including the role of algae in biodiversity, and evolution.

Shown from L to R: Rick McCourt (Academy of Natural Science, Philadelphia), Dail Laughinghouse IV and Walter Adey (Smithsonian Institution), and Matilda Madden (University of Maryland, Eastern Shore).

Bill Nye, Mayim Bialik, and the MythBusters (Jamie Hyneman and Adam Savage) Angle 2012; Johnson and Shilobrit 2012). Organizers reported that over 150,000 visitors attended the festival.

At the PSA booth visitors created colorful alginate gels in two small mesocosms, while volunteers handed out informational bookmarks and explained the utility of algae in food, cosmetics, drugs, and industry. One volunteer even brought some Sea Chips and dried kelp strips for tasting. An estimated 10,000 people passed the booth and took a bookmark, while about 3-4,000 stopped to make a gel. Many visitors engaged in discussions with our volunteers.

# USA Science and Engineering Festival, continued

A small viewing area with chairs and headphones created an exciting 'Algae Theater' for festival attendees to watch the 39-minute video entitled 'The Amazing World of Algae' (Adey 2012). Karen Loveland Adey produced the film, which is a series of short videos on algal topics ranging from kelp to ice cream, aquaculture, biosorbents, biofuels and more. The film is a co-production of Ecological Systems Technology, Karen's company, and the Phycological Society of America. The film also includes a short and effective introduction to PSA and what the society and its members do. Over 100 copies of the film were sold at the PSA Annual Meeting in Charleston in June 2012. **Copies of the DVD** are available for a modest donation to the PSA Endowment. Please contact Rick McCourt, Chair of the PSA Board of Trustees, for details at [rmccourt@gmail.com](mailto:rmccourt@gmail.com).

Organizing the PSA booth over a period of about 6 months was a big effort, and on the day of the festival we felt like part of a military invasion—all the exhibitors met in a stadium parking lot and moved into the convention center in a period of several hours. Obviously, this took a lot of work, and many thanks to all who volunteered to staff the booth (~20 hours of operation!) including: Walter Adey, Charles Yarish, Susan Brawley, Karen Adey, April Blakeslee, Quay Dortch, Amy Fowler, Beth Gantt, John Hall, H. Dail Laughinghouse IV, Matilda Madden, Rick McCourt, Gisele Muller-Parker, and Monaca Noble.

All in all, the PSA booth was an effective and fun way to educate the public on what algae are, their effects on our daily lives, and how they can help us solve some serious social and environmental problems. We hope to have the opportunity to participate in such festivals and events like it in the future.

## References:

by Matilda L. Madden, Ph.D.

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## ALGAE BOOKMARKS

Front and back views of one of three bookmarks that were available to PSA booth visitors during the 2012 Science and Engineering Festival.

A digital version of the bookmarks, with an explanation of the included images, is posted at [www.psaalgae.org](http://www.psaalgae.org). The bookmarks will be available at the 2013 PSA meeting, and by contacting Deborah Robertson at: [DebRobertson@clarku.edu](mailto:DebRobertson@clarku.edu).



Algae and...  
**People**



### Did you know that Algae...

- produce half the oxygen in the air you breathe
- are used to make medicines, toothpaste and ice cream
- can become fuel for cars

[www.PSAalgae.org](http://www.PSAalgae.org)

Photos by www.AlgaeBase.org, K. Bruun, R. Lavigne

# More from the USA Science and Engineering Festival

Members of three PSA Committees (Applied Phycology, Public Policy, Education; Walter Adey and Charlie Yarish, Co-Chairs; April Blakeslee, Jerry Brand, Susan Brawley, Erick Ask, Terrie Klinger, Simona Augyte, Dail Laughinghouse, Rick McCourt) organized the PSA's presentation and booth for the Second USA Science and Engineering Festival in late spring (April 26-28, 2012) in Washington, D.C. This was probably the largest public outreach event in which the PSA has participated. It was effective in communicating the importance of the algae to a large cross-section of the public. The DC Convention Center was packed with exhibitors, including scientific societies, some universities, research institutes, government science organizations, and high tech/biotech/engineering companies. Visitors to the PSA booth enjoyed making alginate gels, viewed a copyrighted film that the PSA and Ecological Systems Technology produced for the Festival ("The Amazing World of Algae"), and picked up free bookmarks ("Algae and Evolution", "Algae and People", "Algae and Biodiversity"). PSA also partnered with the Society of Developmental Biology's Evolution Trail, which provided additional interest in our "Algae and Evolution" bookmarks among visitors to the PSA booth. The PSA will now be able to use the materials developed for the Festival at other events.

A detailed, illustrated handout on **how to make alginate gels**, as well as explanations of the text and photos on the bookmarks, is now available at [www.PSAalgae.org](http://www.PSAalgae.org). Many visitors wanted to have the information on the alginate activity for "science birthday parties"!



Making a Gel was a big hit !

Volunteers provided hands-on activities at the PSA booth. Shown L to R: Charlie Yarish, Karen Loveland Adey, John Hall.



**“The Amazing World of Algae” DVD** was sold at the recent PSA meeting in Charleston, and is available by contacting Rick McCourt (rmccourt@gmail.com), or visiting the PSA web site (www.psaalgae.org). The film is introduced by a snappy section on what the PSA is and does, prepared initially by the PSA’s Communications’ Committee in response to Producer Karen L. Adey’s suggestion. “Chapter” segments in the film range from algae used to predict climate change to algae grown for food, biofuels, and bioremediation of eutrophic water bodies. Biodiversity segments cover the different types of algae (freshwater to marine, *Prochlorococcus* to kelps, unicellular algae to macrophytes). Some segments were produced and filmed especially for the Festival film, and others were donated by PSA members from existing footage of their research activities underwater and in the lab.

During the Festival, PSA volunteers at the booth talked to a vast swath of the public: Home-schooled kids, public school children from Richmond to Philadelphia who attended with their classes on the first day of the Festival (Friday), program officers (e.g. from NOAA and EPA), engineers, faculty from universities, families of all ages, tourists from all over the US, K-12 teachers, librarians...The demographic was very broad!

The PSA’s outreach was successful due to excellent team work by members of the Festival Committee; each person made a substantial contribution through brain-storming ideas for the booth, serving as liaison to other participating societies and the Festival organizers, fund-raising, recruiting and producing film segments, and doing trial runs on activities. Terrie Klinger (Public Policy Chair) crystallized the Festival Committee’s discussions about what the public needed to know about algae and algal-mediated processes into elegant prose and initial designs for the bookmarks. Many PSA members--and AlgaeBase--donated the beautiful and scientifically relevant photos for the bookmarks and the booth’s banners. April Blakeslee organized the PSA volunteers who staffed the booth: Giselle Muller-Parker (who took back bookmarks for NSF Program Officers), Amy Fowler, Dail Laughinghouse, Rick McCourt, John Hall, April Blakeslee, Elisabeth Gantt, Charlie Yarish, Susan Brawley, Matilda Madden, Walter Adey, and Karen L. Adey. The film was made possible because of Karen L. Adey’s generous donation of her time as Producer; Karen recently retired from the Smithsonian Institution after producing films there for many years. In addition to the PSA’s own funding, generous donations were made by Walter and Karen Adey, DSM, Inc. (Columbia, MD) and FMC, Inc. (Philadelphia, PA). FMC also contributed a truly massive amount of sodium alginate to enable the hands-on activity!

There is nothing like seeing a face light up when that child or adult sees liquid alginate turn into a gel, instantaneously, after squirting the liquid into calcium-containing water---or finds, to their surprise, that algae produced half of the oxygen in the air they are breathing.

Some of us were hoarse by the end of the Festival. All of us were happy with our ability to convey so much information about the algae and career opportunities in our field to the public.

It was fun, too!

– Susan H. Brawley

**PSA Presence at AAAS  
Boston, MA  
14–18 February, 2013**



**GET  
INVOLVED!**

We'd like to raise the profiles of phycological research and the PSA by participating in the well-publicized AAAS meetings. Here are some upcoming opportunities for Boston-area members (and any others interested):

- 1) We've submitted a PSA booth space request for Family Science Days, Saturday and Sunday, Feb. 16–17, 2013. At the booth, we'd replicate the alginate activity that Susan Brawley and others delivered at the spring 2012 National Science & Engineering Festival in DC. We'd also hand out the great PSA bookmarks that Susan produced and show the algae video you might have seen at the Charleston meeting. Volunteers would be needed to man the booth. If you would like outreach experience or just enjoy helping the general public understand the importance of algae, we'd love your help.
- 2) **Boston-area students**, please consider entering the 2013 AAAS student poster competition. **Registration is open until November 2012** (see the AAAS meeting website for more information). It would be great if you could feature the PSA logo on your poster.
- 3) AAAS also holds Career Development workshops in conjunction with the meeting. If you are interested in proposing a workshop, please consider doing so (hopefully putting in a plug for PSA). If you wish, contact Linda Graham ([lkgraham@wisc.edu](mailto:lkgraham@wisc.edu)). Algal biofuels might be a popular topic, as would be others.
- 4) AAAS holds an annual art/graphics/illustration competition. It would be fantastic if a PSA member were to submit a winning entry related to algae (a poster showing fungal diversity won an award a year ago).

PSA will also work toward a presence at the Feb. 2014 AAAS meeting in Chicago, IL. **Chicago-area phycologists:** please consider proposing A) A symposium related to algae, B. a Family Days outreach booth (see above) or C) a career development workshop. Students, please consider planning a poster entry. Contact Linda Graham ([lkgraham@wisc.edu](mailto:lkgraham@wisc.edu)) if you wish.

**San Jose, CA-area phycologists:** AAAS is coming to you in 2015, and it might not be too early to starting planning to propose a symposium, outreach booth, or career development workshop.

## Algae in the News

- \* Have you published a high-profile research or review article related to algae within the past 6 months? Has your institution's news office publicized it? If not, contact your local news crew; science reporters say that they are always looking for a great new story!
- \* If asked for interviews related to your expertise or recent publications, go ahead and do them, because it's a fun experience. You can ask to see the interview transcript before publication so you can clear up any mistakes. Make sure that your institutional and local communities and indeed the entire world hear about your great work or paper, and if appropriate, mention the PSA!
- \* Do you have an informed opinion on a topic of societal interest? Toxic blooms in inland or coastal waters, algae and renewable biofuels, invasive species, multinational collaborative research efforts, or many other algae-related topics? Consider writing opinion letters to Science, Nature, or other high-profile publications. The PSA Public Affairs Committee may be able to offer useful advice.
- \* Principle investigators, wouldn't it be great if the world could see your lab in action via a publicly available video? Algae are too photogenic not to show the world as many examples as possible, in contexts of interest to the general public.
- \* Have you ever wanted to write an article about your research for the general public? Now is your chance. Accessible articles about newsworthy research, research by young investigators, research expeditions/voyages, outreach efforts such as the alginate activity booth at the recent National Science and Engineering Festival in Washington DC, features designed for K-12, and images are being solicited for a new on-line AlgaeZine. Contact Linda Graham [lkgraham@wisc.edu](mailto:lkgraham@wisc.edu), Lee Wilcox [llwilcox@wisc.edu](mailto:llwilcox@wisc.edu), or Rick McCourt [rmccourt@gmail.com](mailto:rmccourt@gmail.com).

## Eugene F. Stoermer (1934-2012)

Friend and mentor of many diatomologists, paleolimnologists and aquatic ecologists, and President-elect/President of the Phycological Society of America in 1988-1989, Eugene Filmore Stoermer, died in early 2012 after a two year battle with esophageal cancer. The details of Gene's career can be found in the frontispiece to a commemorative volume of *Nova Hedwigia*, dedicated to Gene (Andresen 2009). Here we just review a few highlights.

Gene began his Ph.D. studies in 1958 at Iowa State University his pioneering study of the stratigraphy of diatoms of West Lake Okoboji. Not content with counting dead diatom valves in cores, Gene and his fellow graduate students at ISU, Stu Pankratz and Ryan Drum, took advantage of the then-emerging technology of transmission electron microscopy (TEM) and produced some of the first papers on diatom cellular ultrastructure, which are still cited today.

He began his long association with the University of Michigan in 1965 as a research scientist at the then-Great Lakes Research Division, and immediately began tackling big questions. He and his colleague, Claire Schelske, developed the "silica depletion hypothesis", explaining fundamental shifts in Great Lakes phytoplankton communities. Like his early adoption of TEM, Gene continued to see the potential in new technologies, sometime well before they could be practically applied. His unpublished work with Ed Johnson on automatic diatom identification was such a forward looking ambition that just to distinguish a round diatom from a long thin diatom took almost half the computing capacity of the Michigan mainframe of the late 1960's! When computing technology caught up, his laboratory followed with a large number of papers on the statistical analysis of shape and form in diatoms (Ladewski, Mou, Pappas, Theriot). His students were early adopters of cladistic methodology (Kocielek, Julius) and molecular approaches to diatom systematics (Bourne). And many of his students continued Gene's interest in limnology, stream biology and paleolimnology of the Great Lakes and the Midwest (Andresen, Kreis, Stevenson, Tuchman, Carrick, Wolin, Donar, Hendricks). He also participated in several international collaborations, including studies of Lake Baikal (Edlund).

Primarily recognized for his research, Gene was equally innovative in the few opportunities he had to teach. As a post-doctoral associate, he began the now famous freshwater diatom course at Iowa Lakeside Laboratory, one of the first, and a course still taught today.

In closing with a more personal view, Gene grew up in the little Iowa town of Gillette Grove. We believe the "midwestern farm-boy" mythos tells one much about Gene. He was almost always congenial, and always quick with a dry, folksy anecdote (one that almost always somehow included some subplot about summer visitors to Lake Okoboji from the "big city" of Minneapolis, regardless of the actual point of the story!) His college education had been interrupted by military service, during which he was involved in a serious non-combat motor vehicle accident. This left him with a slight "hitch in his giddyup". Nevertheless, as a stereotypical robust midwestern farm-boy, Gene still out-walked most of his younger graduate students on occasional pheasant hunts across southern Michigan! His love of people and nature, and his enthusiasm for learning supported and coaxed the same out of a generation of North American diatomologists, and he will be missed.



Gene Stoermer in 2007. Also see the [Diatoms of the United States web site](#) for a tribute to Gene by Sarah Spaulding, along with information about a memorial fund that was established in Gene's honor.

**Edward Theriot, Director**

**Texas Natural Science Center and Texas Memorial Museum**

# PHYCOLOGICAL TRAILBLAZER No. 37: FELIX EUGEN FRITSCH

FELIX EUGEN FRITSCH (26 APRIL 1879 – 2 MAY 1954) (FIG. 1) WAS A MAJOR FIGURE IN PHYCOLOGY IN THE FIRST HALF OF THE 20TH CENTURY (LUND, 1996). HIS ACCOMPLISHMENTS AND CONTRIBUTIONS DESERVE A RE-TELLING IN THIS SERIES. OF GERMAN EXTRACTION, HE WAS BORN IN LONDON ON 26 APRIL, 1879, THE SON OF A SCHOOLMASTER. HIS EDUCATION WAS FROM THE UNIVERSITY OF LONDON, AND HIS D.PHIL. DEGREE WAS EARNED AT THE UNIVERSITY OF MUNICH IN 1899. HE WAS AN INSTRUCTOR IN THE PERIOD 1902 TO 1911 BACK AT THE UNIVERSITY COLLEGE, LONDON. FOLLOWING THAT STINT, HE MOVED TO QUEEN MARY COLLEGE, LONDON. HE RECEIVED THE RANK OF PROFESSOR OF BOTANY IN 1924 AND SERVED UNTIL HIS RETIREMENT IN 1948.

Fritsch's (1902a, b, 1903b, 1905) early publications dealt with the phytoplankton of the River Thames. He paid attention to periodicity in the algae (1906b). The scope of his interest in freshwater algae extended to Sri Lanka [Ceylon] (1907a) and other tropical regions (1907b), including South Africa (Fritsch, 1918; Fritsch & Rich, 1924b, 1925, 1929, 1937; Fritsch & Stephens, 1921). He worked up collections of freshwater algae from the South Orkneys and elsewhere in the Antarctic (1912a, b, c, 1917). In his later studies (1929a) of the encrusting flora of rapid-moving streams on the north coast of Devonshire, he recognized that the blue-green algae were the most abundant constituents. He also noted the presence of diatoms and a new species of *Gongrosira* (*G. fluminensis*). He published an account of our knowledge of algal ecology of static waters, providing an in-depth review of previous work (1931). With R. P. John, Fritsch newly recorded many taxa of algae from soils in the British Isles including a number of new species (Fritsch & John, 1942). He described several new species of *Sphaeroplea* (Fritsch & Rich, 1918, 1929; Fritsch, 1929b).

Fritsch demonstrated a remarkable ability at synthesis, in recognizing the parallel trends among the diverse



**Fig. 1. Felix Eugen Fritsch and Mrs. Fritsch, on a picnic near Stockholm, Sweden, 1950 (image by W. R. Taylor, MICH.)**

algal classes but yet the differences that separated them (1929c). He was able to apply new data to innovative schemes of classification (Fritsch, 1944c). Fritsch described many new genera of algae and Cyanobacteria, including *Cladophorella* (Fig. 2) (1944b) and (with M. F. Rich) *Pearsoniella* (1924b) and *Raphidiopsis* (1929). But some of his new genera did not stand the test of time. His *Chamaesiphonopsis* (1929a) was later merged within *Chamaesiphon* by Komárek & Anagnostidis (1999), and his *Chrooderma* (1942a) was merged within *Cephaleuros* by Printz (1964). Although Geitler (1942) had treated his two species of *Fischerellopsis* (1932) within *Fischerella*, the former name is currently accepted by Komárek & Hauer (2012). His *Isococcus* (1914), based on his *I. sphagnicolus*, was later regarded as within the circumscription of *Chlamydomonas* (Fritsch & Takeda, 1916). His *Scotiella*, based on his *S. antarctica* (Fritsch, 1912a), has been variously interpreted, such as the zygotes of some snow algae (Stein & Amunsen, 1967; Hoham & Mullet, 1978).

## Fritsch, continued.

In referring to “all the *Cosmarium*-like forms, in which the end-view is 3- or more-sided with non-produced angles, under one common generic heading”, Fritsch (1953: 266) stated “the name *Cosmostaurastrum* may be suggested”. The somewhat provisional treatment of this generic name would render it invalid (ICN, Art.34.1). AlgaeBase does not recognize the name at this time (Guiry & Guiry, 2012).

At the time of the International Botanical Congress held in Cambridge, England, in 1930, Fritsch was the recognized phycological authority on the world stage, and that pre-eminent stature is reflected in his front row, center position in the photo that was taken of the assembled phycologists on that occasion (Fig. 3). Even then, his major achievement was in the future, namely, the publication of his two volumes *The structure and reproduction of the algae* (Fritsch, 1935, 1945a). Up to that time, there was no such comprehensive work, other than the volumes (in German) by Oltmanns (1904-1905). So his monumental synthesis of the literature on all groups of algae was a tremendous accomplishment. The high quality of his work and his insight still stand as a bench mark in the annals of phycological literature.

Over his long career, Fritsch showed a special interest in the Cyanobacteria, producing treatments on *Aphanochaete* (1902c), *Anabaena* (1949d), and blue-greens with lime-producing capabilities (1946, 1949b, 1950a, b). His presidential address for the Linnean Society demonstrated his long fascination with the heterocyst in Cyanobacteria (1951a). In a later presidential address, Fritsch (1953) presented his views on the Desmidiaceae, which he considered “a polyphyletic group”.

He contributed his ideas on the widespread occurrence of heterotrichous growth in various unrelated groups of algae, including Cyanobacteria (Fritsch, 1939), and thought that from it advanced types of thalli originated (Fritsch, 1942b). His interest was not restricted to freshwater algae, but he showed a breadth of interest, including life-history differences and strategies in the marine algae (1942c, 1943a, 1949c) and anatomy of the Fucales (1945c, 1952a). In the latter phase of his career, he clearly became more occupied with questions on the evolution within the groups of algae and the relationships of algae to land plants (1949c).

Fritsch (1951b) contributed a chapter on the Chrysophyta in G. M. Smith's *Manual of Phycology*, and at that time that phylum consisted of only three classes, the Xanthophyceae, Chrysophyceae, and Bacillariophyceae. In the 60+ years that have followed, our understanding of that algal assemblage, now usually called the Ochrophyta, has come to recognize (at the moment) a total of 18 classes (Guiry, 2012).

One of Fritsch's legacies is the on-going accumulation of illustrations of freshwater algae. He started it around 1912, with his own illustrations, and he kept adding to it his own sketches and as well as illustrations from the literature, such that by the time of his death, the collection contained around 20,000 illustrations. They were donated by his widow to the Freshwater Biological Association, which has continued the practice of gathering of images of freshwater algae, thanks largely to Dr. John W. G. Lund (Lund, 1961). The Inter Documentation Company issued a microfiche of the collection of illustrations in 1964, with a series of supplements later being issued (1972, 1978, 1982, 1987, 1992, 1996).

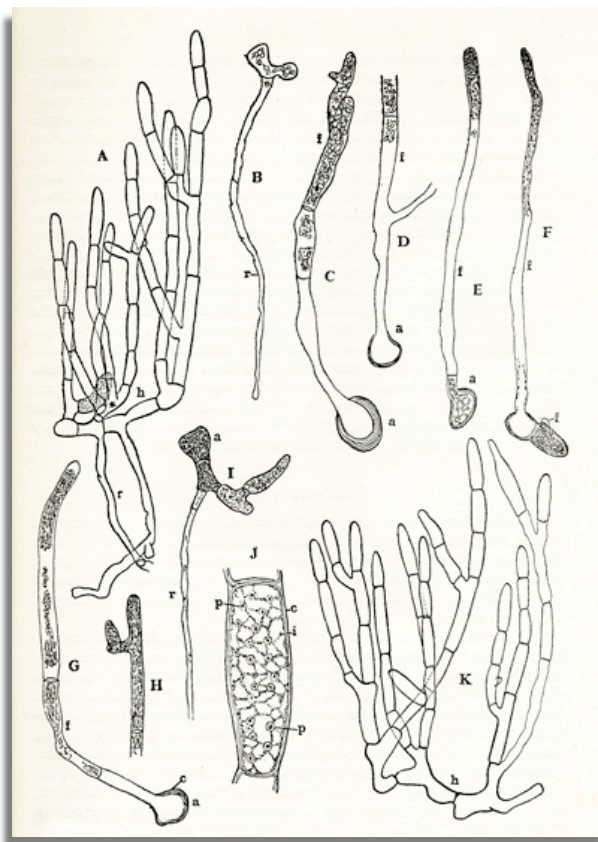


Fig. 2. *Cladophorella calcicola*.  
[From fig. 2 in Fritsch, 1944b.]



Fig. 3. Phycologists attending the International Botanical Congress, Cambridge, 1930.

Front row: Robert W. Kolbe, Gustav A. Senn, Gilbert Morgan Smith, Adolf Pascher, **Felix Eugen Fritsch**, Nils Svedelius, Margery Knight, Harald Kylin, Nellie Carter; Back row: Bruno Schussnig, Arthur Disbrowe Cotton, M. O. P. Iyengar, Benjamin Millard Griffiths, Geoffrey Tandy, William Randolph Taylor, Anne Hof Blinks, W. H. Pearsall, M. Alison Westbrook, Ethel M. Poulton; on grass: Anthony Rees, Lothar Geitler [Courtesy of Univ. Mich. Herb. archives.]

*The Fritsch Collection of Illustrations of Freshwater Algae* has grown to more than half a million figures (Dorr & Nicolson, 2009). Many of these images were used in the production of *The freshwater algal flora of the British Isles* (John et al., 2002, 2011).

Fritsch was a significant force in the founding of the Freshwater Biological Association in 1929. An anonymous note (1955) on his passing recounted the launching of the Freshwater Biological Association and its “struggle” to come into existence, at a meeting in June, 1929. Then on a cold day in March, 1931, Fritsch and Mr. J. T. Saunders, the Hon. Secretary, traveled to Windemere to inspect a few rooms in Wray Castle. Three rooms were available to rent to start the fledgling Association (a boudoir, a smoking room, and a library, which was the third and largest room). With its limited funds, then insufficient to build a new station or a laboratory, the Association “would have to make the best of what had been offered in the Castle”. With time, the whole building would be later occupied by the Association.

Fritsch was elected as a Fellow of the Royal Society in 1932 and was honored with their Darwin Medal in 1950. From 1949 to 1952 he served as President of the Linnean Society. Iyengar (1932) remembered him with the honorific *Fritschella* (Fig. 4), a genus possessing several distinctive features, including the formation of parenchyma and perennating “tubers” (Fritsch, 1945b).

Anonymous. 1955. Report of the Council for 1954-55. Freshwater Biological Association Twenty-Third Annual report for the year ended 31 March, 1955...pp. 7-10, with portrait of Fritsch.

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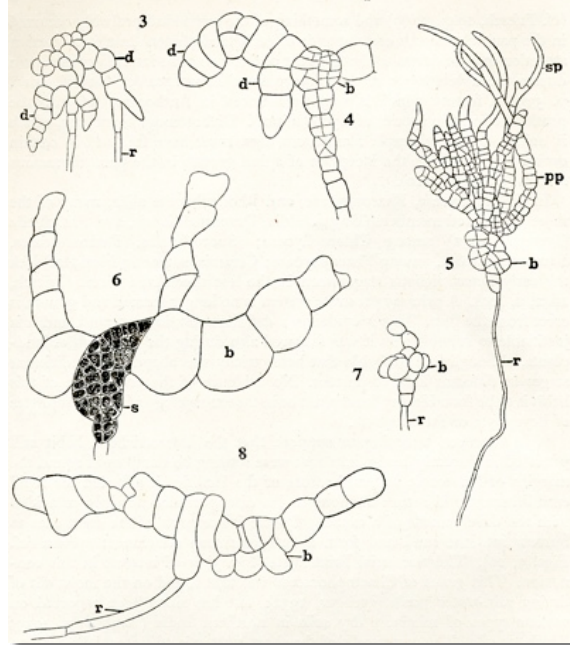
\_\_\_\_\_. 1912b. Freshwater algae. National Antarctic ("Discovery") Expedition 1901-1904. *British Museum Natural History* 6: 1-66, pls 1-3.

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**Fig. 4. *Fritschiella tuberosa* Iyengar. [From figs 3-8 in Fritsch (1945b), based on Iyengar (1932) and Singh (1941)].**

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**Michael J. Wynne**  
**University of Michigan Herbarium, Ann Arbor**

**Annual Business Meeting of the PSA**  
**Frances Marion Hotel, Charleston, SC**  
**22 June 2012**

The meeting was called to order by President Juan Lopez-Bautista at 4:32pm.

**Attendance:** 52 members at 4:32pm

The minutes from the 2011 PSA Annual Business meeting were reviewed by those present. A motion for approval of the minutes was made by Russ Chapman, seconded by Deb Robertson, and unanimously approved.

1. **President's Report – Juan Lopez-Bautista.** Juan reported that it has been an exciting year for PSA in terms of changes to the Journal, and in that so much of the membership is active on committees within the Society. Juan reported on the workshops that have been organized and offered by the Education Committee, highlighting the genomics workshops from this year's meeting as well as the active learning workshop planned for next year's meeting. This year we have also searched for a new webmaster and two PSA members will be starting immediately after this meeting (Dail Laughinghouse and Matheus Carvalho de Carvalho). Juan thanked Daryl Lam for his service as PSA webmaster over the past several years. Next year we will be meeting with the International Phycological Congress in Orlando, Florida with Dennis Hanisak as the local organizer.

Membership in scientific societies in general has been declining; he described the "Bring a Buddy" campaign to increase membership and his recruiting efforts at other meetings. In support of natural history collections, PSA signed a letter urging NSF to continue funding collections research. Juan described the Council of Scientific Societies Presidents meeting and general efforts to increase diversity within scientific societies. He recommended PSA initiate an ad hoc committee to increase human diversity, which was accepted by the Executive Committee (EC) at their meeting earlier in the week.

He invited Wayne Litaker to report on Elections. Wayne reported that 35-55 nominations were received for each position, and elections were very close. John Stiller was elected as Vice-President/President-Elect and Eric Linton as Treasurer. Four members were elected to the Editorial Board of the Journal of Phycology: Paul Gabrielson, Patrick Keeling, Suzanne Strom and Suzanne Roy. The change in Bylaws to constitute the Public Policy Committee as a standing committee was overwhelmingly approved (197 in favor, 3 opposed and 12 abstentions). He asked for members who have had difficulties with the electronic voting to contact him.

2. **Past-President – Susan Brawley.** Susan reported that she was pleased that membership increased 15% last year (her "2012 campaign" began last year with the aim of having 2012 PSA members by end of 2012). She then reported primarily on the Science and Engineering Festival in Washington, DC in April. This was a pan-committee effort that created and manned a public display about algae and the PSA, and produced 100,000 algae bookmarks (Susan encouraged members to take home bookmarks to distribute and buy a copy of the film). The committee was headed by Walter Adey and Charlie Yarish. Karen Adey produced an Algae film on DVD that is available for purchase for \$5 (introductory price only for the Charleston meeting). Susan thanked all the volunteers who were involved at the festival as an important outreach activity for the Society.
3. **Vice-President / President-Elect – Linda Graham.** Linda has been working to make the 2013 meeting a success. She has also been working to raise the profile of the PSA, and she will be contacting members specifically to help with this effort.
4. **Treasurer's Report – Chuck Delwiche.** PSA's last net profit share from the Journal was \$97,967, which is a slight decrease from previous years (possibly due to costs associated with the midyear EC meeting). Chuck advised caution since income from the Journal seems to be reaching a plateau. We had a net income of \$6,845.73 from last year's annual meeting in Seattle; he noted that PSA invests substantially in the meeting program and these investments should be taken into account when valuing the meeting. He suggested that PSA slightly increase cash intake from annual meetings so we are not solely relying on journal income. Fundraising expenses last year were \$723.46. Administrative expenses were \$19,609, of which \$13,410 were related to meeting registration.

**4. Treasurer's Report – Chuck Delwiche, continued.**

The publishing industry is changing rapidly and Chuck again recommended finding ways to diversity Society income, such as adding investment in IT and increased involvement in media. The Journal transition has been smooth and relatively inexpensive. The total assets of PSA are almost \$1.6 million with the treasury and endowment combined; overall, the Society is in good financial condition.

**5. Membership Director's Report – Deb Robertson.** Deb proposed to not change the membership fees this coming year given the global economic situation. The motion was presented to the floor for discussion and was unanimously approved. Deb described a motion that was brought to the EC to change the structure of the student membership category to combine second and third year fees into a one-time fee, which simplifies the payment process. The motion was approved by the EC and was presented to the membership for discussion. No discussion ensued; the vote was called and the motion was unanimously approved. The 2012 membership is estimated at about 1,100, which is an increase over recent years. If the membership recruitment campaigns are successful we will have over 2,000 members. The membership committee is working on materials for distribution that will explain the benefits of PSA membership.

**6. Managing Editor of the Journal of Phycology – Mike Graham.** Mike introduced the co-Editors, (Debashish Bhattacharya, Arthur Grossman, Jonathan Zehr and Mike Graham). He also introduced Arly Muth as the Journal's Editorial Assistant. Details from former Editor Bob Sheath's report for 2011 were given: 283 manuscripts were submitted last year (which is slightly down from previous years), 142 were published (with a slight backlog published in December, February and June). A total of 1,463 pages were printed in 2011. Length of time from submission to initial decision has increased to 3 months due to the review process becoming bogged down. One of the major initiatives of the new editorial team was to tackle this issue. The August 2012 issue will contain a letter from the editors that highlights the changes over the coming years. Their highest priority is to increase quality and impact of the Journal. The August issue displays the new cover with an emphasis on the "International Journal of Algal Research" byline, a full page cover and running titles of broad interest papers and mini-reviews on the cover. They will also begin accepting submissions for the new "letters" format (2500 words, 2 figures/tables, 3 columns), with the aim of processing these at one month from acceptance to print. The Journal will also encourage Bold and Lewin Award winners to submit their work for additional emphasis. Mike described changes to the review process in ScholarOne (aim to cut down processing time to 6 weeks from 3 months); accepted articles will appear online within 72 hours with a permanent doi.

**7. Program Director's Report – Dale Casamatta.** Approximately 180 participants attended this year's meeting. Dale thanked Fran van Dolah as the local organizer in Charleston. The 2013 meeting with the International Phycological Congress will be held in Orlando, Florida at the Renaissance Hotel with Dennis Hanisak as the local organizer. Workshops to be offered at the conference will include one on the PRIMER software package. The 2014 meeting will be a joint one with the American Society for Limnology and Oceanography, the Society for Freshwater Studies, and the Society for Wetland Scientists in Portland, Oregon at the Portland Convention Center. The 2015 meeting will be a solo PSA meeting, and Puerto Rico is being pursued as a possible location. The 2016 meeting may potentially be with the American Society of Plant Biologists in Austin, Texas. Questionnaires will be sent out to the membership to poll possible dates, symposia of interest, workshops, etc.

**8. Student Representative's Report – Matt Bennett.** This year's meeting had approximately 100 students, which is a great turnout. There was also a great turnout for the student social (ca. 50). Matt contacted students recently for comments and questions, and he brought those to the EC. He encouraged faculty to let their students know to contact him if they have any issues or questions regarding student affairs within the Society. Last year there were 253 student members, and this year the number has increased to 294, although there are only 16 students from Canada and Mexico combined. Matt thanked PSA for continued support of the Society's students.

9. **Chair of the Board of Trustees Report – Rick McCourt.** The Board of Trustees (BOT) serves in an advisory capacity to the EC and recommends management of the Society. No change in BOT composition will occur this year. Rick wrote a history of the endowment in a recent issue of the Newsletter, and explained how the Society's endowment started with a \$100 check and has now grown to over \$1 million. The BOT will be engaged in some fundraising efforts over the next year. They would like to raise the level of the Prescott Award and the Lewin Award. Rick recognized Paul Gabrielson for his donations to the Lewin Award.
10. **Fund Manager's Report – Tim Nelson.** The student fundraiser from the past two years has generated \$31K to increase student support (half of the funds were spent immediately and half invested). The BOT would like to raise \$4K for the Lewin Award line to be able to give out \$500/year. Tim reported that the Treasury Reserve value is \$95,491.73, the Life Members Fund is \$228,548.63 and the Endowment is \$1,158,751.78, for a total value of \$1,482,792.14. PSA awarded 12 Hoshaw awards this year, eight Grants-In-Aid of research (GIAs), four Croasdale awards, two Provasoli awards and the Bold and Lewin Awards. Meeting symposia are also funded in part by the endowment. Tim presented the amounts of the different endowment lines and showed a substantial increase that resulted from a transfer from the Treasury, most of which was for the General Fund line since it needed to increase and can be flexibly spent. However, interest rates keep dropping, meaning lower returns on Society investments. The 2012 projected earnings are at 4%, possibly lower in 2013. The other two funds are invested in stocks and bonds, and have increased slightly. In terms of anticipated funding in 2013: we will raise student lines from the general fund, aim to offer \$6K for Croasdale awards, \$11.5K for GIAs, \$10K for Hoshaw awards, fund symposia at \$7,400, the Prescott award up to \$2K and \$3,500 for the Provasoli award. Tim reported that approximately \$1,500 was raised at the auction at this year's meeting, and there will also be some income from the headquarters room. Juan informed the membership that International Vice-President Mike Guiry (Ireland) is resigning due to health and financial issues. The EC discussed this issue and Mariana Oliveira (Brazil) will be appointed in his place.
11. **Communications Director's Report – Louise Lewis (in absentia, given by Juan Lopez-Bautista).** Juan reported for Louise that the PSA website has been managed by Daryl Lam, and two people will be carrying on with these duties starting immediately after the annual meeting (Dail Laughinghouse and Matheus Carvalho de Carvalho). A new website will be constructed for PSA with a committee looking after the design. An open source content management system will be used, but a professional will be hired to implement the new site. A survey will be used to learn which website features would be most valued by the membership. PSA has a presence on Facebook and Twitter as of February 2011. These sites are used to post announcements of upcoming deadlines (e.g. student award deadlines). The new lead Twitter person is Karolina Fučíková and the lead Facebook person is Hilary McManus. The PSA Communications Committee assisted Susan Brawley and others in gathering materials for the Science and Engineering Fair video and by the end of the summer will be helping to design the sleeve for the DVD.
12. No new business was proposed.
- The meeting was adjourned at 5:52 pm.
- Respectfully submitted by PSA Secretary Alison Sherwood.

### Notice:

Word has reached us of the passing of our Australian colleague **Elise M. Wollaston**, formerly of the Department of Botany, University of Adelaide, South Australia, on August 30, 2012. Elise was 90 years old. She had numerous publications based on studies of selected families of the red algal order Ceramiales (Balliaceae, Callithamniaceae, and Ceramiaceae) of southern Australia, the Pacific coast of North America, and the eastern and southern coasts of Africa.

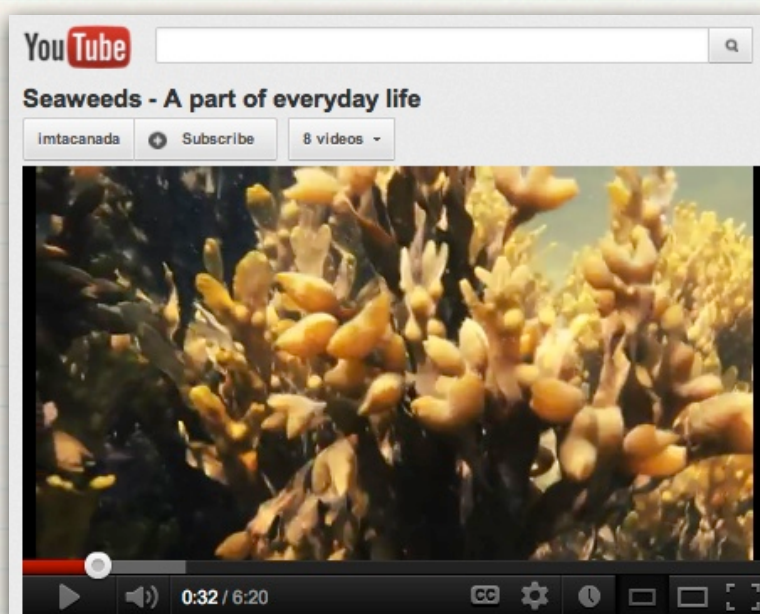
## News from Colleagues

An informative video (<http://www.youtube.com/watch?v=kZup18AZtzk>) on the roles, applications and values of seaweeds in marine ecosystems, our economy and society has been created by researchers at the University of New Brunswick in Saint John and at the Fisheries and Oceans Canada St. Andrews Biological Station, in partnership with the Atlantic Canada Opportunities Agency, the NSERC Canadian Integrated Multi-Trophic Aquaculture Network, and Cooke Aquaculture Inc.

The piece is designed for the general public, experts and educators alike. Seaweeds belong to one of the less known and appreciated groups of marine organisms on this planet – the marine algae – yet play key roles in Earth processes and services. Seaweeds are the largest crop cultivated at sea (46%). They are used in many diverse applications, making them part of our everyday life (from your orange juice in the morning to your toothpaste at night).

Not only are the seaweeds cultivated in the Bay of Fundy involved in recapturing nutrients in integrated multi-trophic aquaculture systems, they are becoming commercial crops as sea vegetables and ingredients in cosmetics and fish feed.

For more information on the research, this project or the partnership, contact **Dr. Thierry Chopin**, UNB Marine Biology Professor and Scientific Director of the Canadian Integrated Multi-Trophic Aquaculture Network (CIMTAN) at [tchopin@unb.ca](mailto:tchopin@unb.ca).



Please note the availability of **extensive digital documentations of seaweed voucher specimens from the Canadian Maritime Provinces** that represent phycological collections of C. Bird, J. Craigie, T. Edelstein, and J. McLachlan while they were associated with the National Research Council of Canada's, Halifax facility. Most of these original specimens are now deposited in the Nova Scotia Museum collections (NSPM) in Halifax, and they were scanned at Acadia University and are now available on line. Further information regarding these scans and the original specimens deposited in the Museum can be obtained from Marian C. Munro, Curator of Botany, Collections and Research, Nova Scotia Museum, 1747 Summer Street, Halifax, NS B3H 3A6 ([ZINCKMC@gov.ns.ca](mailto:ZINCKMC@gov.ns.ca)).

continued from p. 2

IOCAS (<http://www.qdio.ac.cn/english/>) was founded in 1950. C.K. Tseng, considered the Father of Phycology in China and a charter member of PSA, was a founding member of IOCAS and a former director of this Institute. At IOCAS, my host DeLin Duan introduced me to the members of the Institute for my talk about the research programs on the Tree of Life of Green and Red Algae. A second talk was directed to the graduate students and was more technically oriented and used the green algal order Trentepohliales as an example. A fruitful discussion followed on the challenges of species concepts as applied to each student's research.

At a later visit to the OUC I met Dr. Gao Wang (Biodiversity and Applied Phycology) and his group of students and researchers. A discussion was centered on the possible exchange of graduate students and postdocs. PSA bookmarks and Algal DVD were distributed at the OUC.

Later, Dr. Duan and I visited the nearby region Rongcheng, where ongoing algal cultivation and a kelp processing companies are located. The company has an extensive algal cultivation system (visible if you google the city name in google maps and switch to satellite view). During my visit the harvesting of *Gracilaria lemaneiformis* was going on and boats and trucks loaded with *Gracilaria* were abundant (the other major cultivar, out of season during my visit, is *Saccharina*). By the time you read this, a set of photographs and a video will be uploaded in the PSA facebook site showing the cultivation systems and harvesting of *Gracilaria* in Rongcheng.



Research group at OUC, from left to right Cao Min, Dr. ZiMin Hu (UA postdoc), Dr. Gao Wang (PI and Hostess), Zhou Wei, Ci Shufang, Shao Zhanru and Li Jingjing.

by the large variety of food products consumed in China and at the possibility for expansion and marketing at USA. In a meeting with the CEO and managers I invited them to apply for a potential exhibition booth at 2013 PSA meeting in Orlando, FL.

I hope you all have a great Fall semester, enjoy the rest of 2012, and I look forward to seeing you in Orlando, FL, August 4-10, 2013!



Research group of Dr. DeLin Duan at IOCAS; from L to R: Hui Guo, Dr. Jianting Yao, Zhang PY, Dr. ZhongMin Sun, JingJing Li, Dr. Delin Duan (Host and PI), YunYan Deng, Dr. Juan Lopez-Bautisa, ZhanYu Shao, Jie Zhang, Dr. ZiMin Hu (UA postdoc), Li QY, Dr. Fuli Liu.

Our final stop in Rongcheng was the kelp processing company, Shandong Haizhibao Ocean Science and Technology Co., Ltd. The company (<http://www.haizhibao.net>) is located at the easternmost end of Shandong Peninsula. Founded in 2008, the company employs 700 people in the area. Haizhibao products are based on the processing of the kelp *Saccharina* that is cultivated in the area. The raw material is processed into more than 50 different food products, from raw material to kelp noodles and instant seafood. The company products are commonly known in China as “ocean vegetables” or “longevity food”. The CEO Che Hongzhi, graciously invited us, me and my host Dr. Delin Duan, for dinner to try the different “longevity food” products as well as other Chinese dishes. I most confess that I was surprised



A delicious “kelp noodle salad”, served in many Chinese restaurants.

# NEW BOOKS

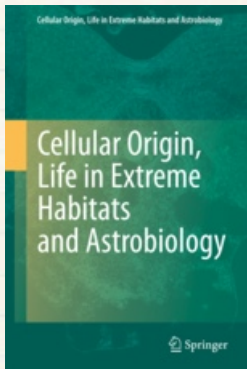
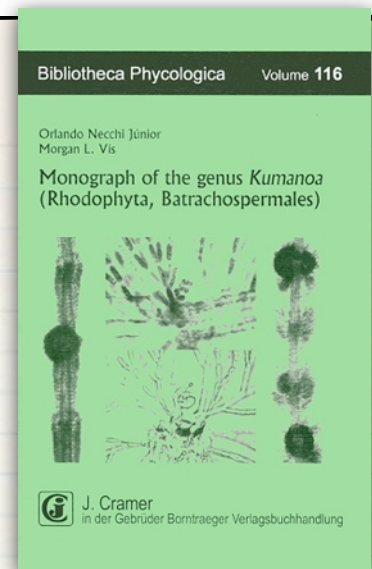
Orlando Necchi Júnior and Morgan L. Vis

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**DEADLINE FOR CONTRIBUTIONS TO THE  
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