

12th ESP Congress Bath, England



Cara Benjamin, Steve Ullrich, and "Swamy" Ananthaswamy (L to R) at Stonehenge, in the Salisbury Plain of England.

The biennial meeting of the European Society for Photobiology (ESP) was recently held at Bath, England. I was pleased to see that many ASP members were able to travel to Bath and participate in the meeting. I was particularly happy to attend many of the outstanding presentations by our associate members, whose travel to Bath was supported by the Urbach Travel Awards. Once again, the ASP expresses our thanks to **Charles Rivers Laboratories**, **AGI-Dermatics**, and **Anne Spikes** for their generous contributions to the Urbach Fund.

Besides attending the excellent scientific sessions, a number of ASP council members and the Past President were able to meet with their counterparts from the ESP to discuss how the two societies can better collaborate and cooperate. We discussed the joint ASP/ESP symposium, travel awards, and expressed our commitment for each society to support the others scientific meetings.

Congratulations are in order to **Rex Tyrell**, who organized this outstanding meeting. We look forward to seeing our friends from the ESP at our upcoming meeting in San Francisco.

-Steve Ullrich

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ASP Seeks New Editor for *Photochem Photobiol*

The American Society for Photobiology is seeking applications for the position of Editor-in-Chief of its journal, *Photochemistry and Photobiology*, the premier journal in photobiology. The Journal's aims and scope and list of current editors can be found at www.aspjournal.com. You are invited to suggest candidates or nominate yourself. The preferred candidate will have a background in photochemistry, photobiology, or photophysics. Prior experience on the editorial board of a journal is an advantage. The duties of the Editor-in-Chief include enhancing the quality of manuscripts submitted, ensuring fair

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treatment of all manuscripts, selecting associate editors, managing the editorial office, interacting with the publisher, and reporting to the society's publication committee. The term begins in January 2009. The Society provides an honorarium and expenses.

To apply, please provide a letter describing your prior reviewing/editing experience and reasons why you are interested in the position, along with an NIH-style biosketch. This material should be sent in PDF format to **David Sliney**, Chair of the Editor Selection Committee, at David.Sliney@att.net. Questions regarding editorial duties and philosophy may be directed to the current Editor-in-Chief, **John Simon** at john.simon@duke.edu. For full consideration, please send your e-mail by November 1, 2007.

-**David Sliney**, ASP President-elect

ASP Membership Renewal

It's time to renew your ASP membership for 2008!

Please invite a colleague or student to join as well. See the last page of the newsletter for details.



Letter From the Editor Communications

This month's newsletter features many articles focused on communications. On page 1, **David Sliney** announces that the ASP is searching for a new Editor-in-Chief for *Photochemistry and Photobiology*, the society's journal for communicating research in photobiology and photochemistry. The term begins in January 2009 and applications are requested by November 1, 2007.

There are numerous other articles about communications. There is an article about the recent interview of **Joan Roberts** (ASP Councilor) on National Public Radio. The interview was entitled "Let There be Light" and is available as a free mp3 download. Also in this issue is an announcement that **Govindjee** (ASP President in 1981-82), recently received the "Communication Award" from the International Society of Photosynthesis Research. In another article, **Jennifer Greene** (ASP associate councilor) encourages associate members to contact her for suggestions about how to improve the experience of associate members within the ASP. Jennifer wants to do what she can to ensure a large turnout of associate members at the upcoming ASP meeting in California (June 20-25, 2008). Please look at our newly established web site for the 34th ASP meeting, www.asp2008.org. This site will be updated with more information in the coming months.

Finally, **Linda Hardwick** would like to announce that anyone who would like to be removed from her e-mails to the ASP membership, to send her a brief message to her, lhardwick@allenpress.com.

ASP News

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Adopt-a-Photobiologist Program

The American Physical Society recently began a program called “Adopt-a-Physicist”. The program is in its third year and has been very successful. See: www.adoptaphysicist.org/webdocs/about.cfm .

As the web site explains, “Adopt-a-Physicist connects high school physics students to people with bachelors’ degrees or higher in physics via online discussion forums. Through their interactions, students can find out about the careers, educational backgrounds, and lives of current physicists.”

In the first year of the physics program, it was fairly “low tech” and students corresponded with mentors via e-mail. It has evolved into an online discussion forum between students and physicists through a dedicated web site. I participated in the program in the first year. After that, the response was so great from the physics community that I was not accepted as a mentor!

I am working with **Jennifer Greene**, our associate council member, to begin a pilot program of “Adopt-a-Photobiologist” within ASP this year. Our plan is to recruit high school teachers and students in the San Francisco area and then invite the teachers to the 2008 ASP meeting in Burlingame. We would like to expand the program in the future to include high schools throughout the US and in other countries.

We are currently enlisting ASP members to participate in this program. Meanwhile, we will also enlist high school science teachers in the Bay Area. In November 2007, we will match up each ASP volunteer with a high school science class. The teacher will collect questions from the class in spring 2008 and have one student email the questions to the photobiologist, photochemist, or photophysicist. A discussion may then proceed between the mentor and the class depending on the level of interest of the students.

Will you volunteer to be a mentor to a high school science class? Please send an e-mail to Jennifer Greene by October 30. Associate members are welcome to participate. Please include a little information about yourself in your e-mail to Jennifer (what kind of job you have, your field of interest).

We look forward to hearing from you!

-**Linda Jones**, jonesL@cofc.edu

-**Jennifer Greene**, greenekl@mail.med.upenn.edu

FDA and LLLT Approvals

Low level laser therapy (LLLT) is a relatively new and controversial therapeutic option used to relieve pain and inflammation and promote wound healing. *Runner’s World* magazine recently cited the ASP web site as a source of information about LLLT, which prompted me to look into the status of this treatment in the FDA approval process. I spoke with **Richard Felton** at the FDA.

There are two types of FDA regulatory processes for medical devices: **FDA approval** and **FDA clearance**. **FDA approval** is used only when a product goes to market through a pre-market approval process (PMA). A PMA or FDA approval is often given for a device that is unique or high risk. The application for approval must have its own clinical trial data. A PMA approval is called “Class 3”. It is generally new technology with no legally marketed predicate. A Class 3 approval must have a multicenter-randomized trial and an inspection of the manufacturing site. The second kind of regulatory process is permission to market a device and is called a pre-market notification or **510k**. A **510k** process gives **FDA clearance** and is called “Class 2”. FDA clearance is not considered a lesser status than FDA approval. Certain devices cannot apply for “approval” because they are considered low risk or because they are similar to other devices already being legally marketed. As more low risk devices companies have applied for FDA clearance, the FDA has begun to ask for clinical trial data for Class 2 devices. FDA clearance includes both safety and efficacy.

Thirty to forty low power laser or LED devices have been **FDA-cleared** for specific uses, such as chronic neck and shoulder pain. Each device is legally approved only for the specific applications for which they are shown to be effective by clinical trials. A device is still considered experimental for any other application. Regulatorily, LLLT devices are compared to IR light-based devices, although they are not thermal. They are classified as non-heating IR lamps. The FDA product codes for LLLT devices are (1) hair growth, (2) non-thermal, and (3) thermal lamps.

Microlight Corporation of America received the first clearance for an LLLT device in 2002. They performed a randomized placebo-controlled study for temporary relief of hand and wrist pain associated with Carpal Tunnel Syndrome by the ML830® laser. Microlight came in as a PMA because it did not have a predicate, but was changed to a Class 2 because it was not a

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significant safety risk. The Microlight study showed a relatively small difference between the placebo and device. However, the FDA considered the ML830® laser as an alternative to drugs and physical therapy that may work for some people.

Each device is legally marketed for a specific use. 510k's are cleared with an indication for use. A 510k application must give a technical comparison and proof of safety, but not necessarily a randomized placebo controlled trial. If a device is not very similar to one already cleared or if the use is different, a new clinical trial must be performed.

Most LLLT devices have been cleared for the application of pain relief. The FDA cleared the first LLLT device for hair growth in January 2007. The HairMax Laser Comb® application supplied a randomized placebo-controlled study. While the study results show a relatively small difference between placebo and the device, the HairMax study demonstrated hair growth at the about same effectiveness as Rogaine. It was decided that a consumer could read the directions and use the device correctly. Furthermore, the FDA decided that a person could select for himself or herself whether they have the specific type of baldness that is indicated for use.

Even if a clinician uses an LLLT device for an FDA-cleared application, an insurance company may decide not to cover the procedure. Regulatorily, these devices are not considered experimental or investigational if used for the specifically approved indication. However, reimbursement is by "standard of care", not just safety and efficacy.

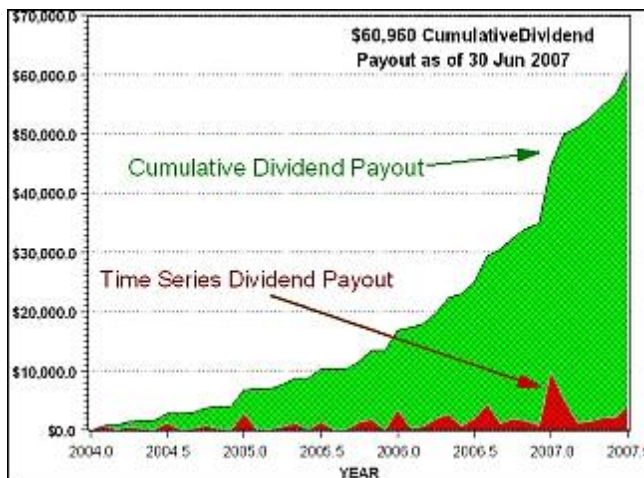
-Linda Jones (from an interview with **Richard Felton**, FDA)

Financial Update

The Fiscal 2008 Budget (September 2007 - August 2008), as passed by Council during the summer council meeting, projects a modest surplus. This *is* a big deal! In only 2 of the prior 12 years has ASP succeeded in operating in the black. Like many other science societies, ASP has experienced unprecedented changes to its traditional sources of revenue. In what now seems like the distant past, net revenue from *Photochemistry and Photobiology* paid for many of the non-journal expenses of the Society. During the last ten years, electronic publishing and constrained library budgets have had a negative

impact on the number of institutional journal subscriptions. At the same time, production, printing, and mailing costs have all risen. Clearly our journal could not carry the bulk of the financial burden of the ASP any longer. With that realization, Council began a sustained effort to change the way we conducted business. The profitability of our science meetings took on a new importance. Every line item of our administrative costs was reexamined, then justified or eliminated. With the setting aside of saved assets as "endowment" (monies separate from operations accounts), investment income came to be seen as a significant and dependable revenue source. This income is independent of journal operations, scientific meetings, or membership dues.

Balancing the budget has required that the components of the budget each be balanced. More than demanding discipline in expenditures and resourceful cultivation of income sources, we could not view "income" and "expenditures" as amorphous pieces that *hopefully* would balance out. Our FY08 operations *will* run a surplus because journal income will exceed journal expenses, the San Francisco meeting income will exceed meeting expenses, the membership dues will exceed the cost of our secretariat, and our investment income will exceed ASP's administrative expenses. This is a forward-looking statement, not a guarantee, and limited by all the disclaimers such statements come with. Nevertheless, it is fairly realistic and certainly not wildly optimistic.



Dividends of ASP's Endowments (ASP, Urbach, and Smith funds).

Most of the pain of restoring financial balance is likely behind us. Our publishing contract with Blackwell should insure continued, but modest,

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profits from journal operations. With the successful Puerto Rico meeting as our most recent learning experience, we look forward to San Francisco. Our endowments have contributed significantly to our improved financial picture. With the oldest of our endowments in existence only since 2004, the three endowments together have paid a cumulative \$60,960 into our operations account (see figure). During the just completed FY07 year, endowment income accounted for 11% of our total operating income. And the best part is that it keeps on growing.

The economic landscape for non-profit science societies has changed significantly. Your Council has made the many difficult decisions that were necessary for ASP's financial survival. With the support of our members, we will have met the challenge and emerged stronger.

-John Streicher, ASP Treasurer

Let There Be Light



Joan Roberts was interviewed on the Brian Lehrer Show on March 29, 2007.

On March 29, 2007, New York Public Radio host **Brian Lehrer** interviewed ASP Councilor **Joan Roberts** (Department of Natural Sciences, Fordham University) and **Marianne Maloney** (lighting designer and founder of Filament 33). The interview, entitled "Let There be Light" covers a broad range of biological effects of light including chronotherapy, UV effects, and Seasonal Affective Disorder.

The interview is available for a free download as an mp3 file from: www.wnyc.org/shows/bl/episodes/2007/03/29#segment76235

-PAE

Associate Members Greetings Associate Members!

I hope that everyone is enjoying the beginning of this new academic year, and is having much success regarding their graduate or postgraduate training. I wanted to start off by thanking all of those people who responded to my e-mail regarding their perspectives as associate members of the ASP. I received a number of responses with suggestions, concerns, and ideas for ways to improve the ASP associate member experience. As a result, I was able to voice your primary concerns with the other members of the council during this year's summer council meeting.

There is a diverse body of associate members, so I received a great breadth of ideas. These ideas include participation in community service events and sponsorship of a career fair at our biennial meetings. Although these ideas are feasible and could prove rewarding for all of those involved, there is some concern regarding how active associate members would like to be within the ASP. While I received e-mails from some members who seemed genuinely concerned about the goals of the ASP, the majority of associate members did not respond.

As your associate council member, I can speak on your behalf so that you can influence our society, especially with regard to policies and activities that affect associate members. This benefit is not always offered to younger members of large societies. Please take advantage by communicating with me!

For the remainder of my term, I will continue to work on implementing the changes that some of you have requested including year-round mentoring relationships, graduate student socials at the conferences, and other ideas. I encourage you to actively participate in these events not only at the conferences, but also when you get back to your institutions. Please be on the lookout for e-mails from me regarding these future activities, and don't hesitate to contact me at for any questions or concerns that you might have.

-Jennifer Greene, greenejl@mail.med.upenn.edu

Photosynthesis in Acidobacteria



Old Faithful, a regularly erupting geyser in Yellowstone National Park (photo by Daniel Mayer).

The July 27 issue of *Science* featured an article that describes a new species of photosynthetic bacteria, *Candidatus Chloracidobacterium thermophilum* [Bryant et al, 2007, *Science* 317:523-6]. This new species was found near “Old Faithful” in Yellowstone National Park and is a member of the Acidobacteria, an incompletely characterized Phylum of bacteria. Previously, photosynthesis has been identified in only 5 of the 25 phyla of bacteria.

The Penn State researchers were able to grow cultures of this new species photoheterotrophically. They also showed that it synthesizes bacteriochlorophyll-a and bacteriochlorophyll-c and that it has chlorosomes and type-1 reaction centers.

The authors discovered this new species in three alkaline hot spring ecosystems of Yellowstone National Park: Mushroom Spring, Octopus Spring, and Green Finger Pool. These hot springs are located near “Old Faithful”. The bacteria commonly grow at a temperature 50-66° C.

-PAE

Publications by ASP Members Review of Hypericin-like Pigments

A forthcoming issue of *Photochemistry and Photobiology* features a review article by **Christopher Lobban** and colleagues entitled “Photophysics and Multifunctionality of Hypericin-Like Pigments in Heterotrich Ciliates: A Phylogenetic Perspective” [1].

Hypericin, classified by chemists as a meso-naphthodianthrone-type molecule, is a naturally occurring pigment present in Saint John's wort. It is a potential therapeutic agent for various diseases.

Hypericin-like pigments are present in the stentorids and *Fabrea* (their sister group), where they control various light-induced movement responses. The phylogenetic analysis of Lobban et al [1] indicates that hypericin-like pigments have evolved at least twice in their roles as sensory photoreceptors.

The interaction of hypericin-like molecules with proteins modifies their photophysics. In particular, there are significant differences in the fluorescence amplitude, lifetime, and quantum yield for pigments dissolved in organic solvent in comparison to pigments associated with native proteins. The molecular mechanism of this pigment protein interaction is an area of active research.

¹Lobban CS, Hallam SJ, Mukherjee P, Petrich JW, 2007, Photophysics and Multifunctionality of Hypericin-Like Pigments in Heterotrich Ciliates: A Phylogenetic Perspective. *Photochem Photobiol* (online early article)

Strategies for Improving Photodynamic Therapy

Photodynamic therapy (PDT) uses a photosensitizing drug, light, and oxygen to selectively destroy cancerous or other harmful tissues. ASP member **Thomas Dougherty** initiated the first clinical trials of PDT in 1986.

A forthcoming issue of *Photochemistry and Photobiology* features a review article on PDT by **Sarika Verma, Gregory M. Watt, Zhiming Mai, and Taryaba Hasan** (Harvard Medical School), “Strategies for Enhanced Photodynamic Therapy Effects” [1].

This forthcoming review article focuses on two general approaches for improving PDT:

First, “Mechanism-based Combination Treatments”, in which PDT is combined with a second type of treatment to increase the susceptibility of tumor cells to PDT or nullify the treatment-outcome-mitigating molecular responses triggered by PDT of tumors;

Second, “Photosensitizer Targeting”, in which the photosensitizer is targeted to a specific site, or an active form of the photosensitizer is distinguished from an inactive form by using cellular functions at the site of action.

¹Verma S, Watt GM, Mai Z, Hasan T, 2007, Strategies for Enhanced Photodynamic Therapy Effects. *Photochem Photobiol* (online early article).

Govindjee Receives "Communication Award"



Govindjee (left), standing with Eva-Mari Aro (ISPR President), while waiting to receive the ISPR "Communication Award".

On July 25, 2007, The International Society of Photosynthesis Research (ISPR) presented Govindjee (ASP President in 1981-82), their prestigious "Communication Award" at the 14th International Congress of Photosynthesis Research. The meeting was held in Glasgow, Scotland. It is the second such Award given thus far. The first "Communication Award" was given in 2004 to David Walker of the United Kingdom.

The Award reads:

"The ISPR Communication Award is presented to Govindjee to acknowledge his outstanding contributions to public understanding of photosynthesis."

-PAE

ASP Homepage Usage Statistics

Counter Dates: June 19 to Sept 9, 2007 (82 days)

Total page views: 3400 (avg of 41.5 per day)

Avg of 49.5 on each weekday

Avg of 22.1 on each weekend day

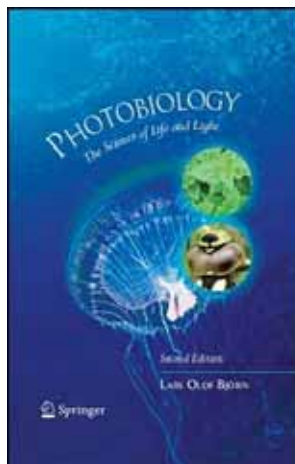
Total unique visits: 2616 (avg of 31.9 per day)

Avg of 38.1 on each weekday

Avg of 17.0 on each weekend day

New Photobiology Book

Photobiology: The Science of Light and Life



The second edition of *Photobiology: The Science of Life and Light*, edited by Lars Olof Björn, is scheduled for publication in November of 2007. This multidisciplinary book covers diverse areas of photobiology and photochemistry including radiation measurement, action spectroscopy, photoperiodism, circadian rhythms, and

photosynthesis. It also covers new topics in photobiology, such as light-dependent magnetic orientation in animals.

The editor, Lars Olof Björn, is professor emeritus at Lund University and a member of the Royal Swedish Academy of Sciences. The book is published by Springer, www.springer.com.

-PAE

ASP 2008
American Society for Photobiology

Burlingame, CA
June 20-25, 2008

Welcome to ASP 2008!
Please join us for the 34th Meeting of ASP in Burlingame, CA. Burlingame is conveniently located between the San Francisco city limits and the natural beauty of the parks and beaches of San Mateo County. The variety of shops and restaurants are accessible by foot or via the free Burlingame Trolley. A free shuttle is available to bring you to the Hyatt Regency when you arrive at the San Francisco International Airport, or to take you to the Airport from the hotel. Downtown San Francisco is just a BART ride away from the Airport.

Burlingame Links
Hyatt Hotel
Regional Map [pdf]
Downtown
Dining
Pigeon Place
Half Moon Bay
Highway 1
Golden Gate Bridge
Cycling

The event will emphasize the breadth of photobiology, with

www.asp2008.org

Upcoming Events

Interactive Map:

www.pol-us.net/map.html

October 7-10, 2007

ISOP-07: International Symposium on Photochromism
Marriott Pinnacle Hotel
Vancouver BC, Canada
Web site: www.isop07.org/

December 9-14, 2007

7th International Conference on Tetrapyrrole Photoreceptors in Photosynthetic Organisms
Kyoto, Japan
Web site: park.itc.u-tokyo.ac.jp/masuda_lab/7th ICTPPO/index.html

January 3-6, 2008

18th Inter-American Photochemistry Society Winter Conference
St. Petersburg, FL
Web site: www.i-aps.org/18th_wintconf/mainpage.htm

January 13-18, 2008

Gordon Research Conference: Sensory Transduction in Microorganisms
Ventura Beach Marriott
Ventura, CA
Web site: www.grc.org/meetings.aspx?year=2008

January 19-24, 2008

SPIE BiOS 2008: Biomedical Optics Symposium and Exhibition
San Jose, CA
Web site: spie.org/x13196.xml

Feb 2-6, 2008

16th IUPAB Congress
Long Beach, CA USA
Web site: www.biophysics.org/meetings/2008/

May 28-June 1, 2008

International Plant Photobiology Meeting
(25th Annual Missouri Plant Biology Symposium)
Columbia, MO
E-mail: Mannie Liscum
liscume@missouri.edu
Web site:
www.biosci.missouri.edu/liscum/IPPM08.html

June 15-19, 2008

17th World Hydrogen Energy Conference
Brisbane, Australia
E-mail: whec2008@icms.com.au
Web site: www.whec2008.com/

June 20-25, 2008



34th ASP Meeting
Burlingame, CA USA
Web site: www.asp2008.org

June 27-July 2, 2008

ASPB-2008
American Society for Plant Biology
Merida Mexico
Web site: www.aspb.org/meetings/pb-2008/

July 7-11, 2008

5th International Conference on Porphyrins and Phthalocyanines
Moscow, Russia
Web site: www.u-bourgogne.fr/spp/icpp.htm

July 28-Aug 1, 2008

XXII IUPAC Symposium on Photochemistry
Gothenburg, Sweden
Web site:
photoscience.la.asu.edu/Goteborg2008/

Sept 7-11, 2008

XIII International Symposium on Luminescence Spectrometry
University of Bologna
Bologna, Italy
Web site: www.isls2008.unibo.it/

October 4-8, 2008

5th European Meeting on Solar Chemistry and Environmental Applications
Palermo, Italy
Web site: spea5.altervista.org/

June 11-15, 2009

2009 International Photodynamic Association World Congress
Seattle, WA
Web Site: www.pms.ac.uk/ipa/congress2009.php

June 18-23, 2009

15th International Congress on Photobiology
Duesseldorf, Germany.

Upcoming Events for Plant Biologists, 2007-08

American Society for Plant Biology
Web site: <http://aspb.org/calendar/listall.cfm>

Upcoming Events for Chemists, 2007-2008

American Chemical Society
Web site: www.chemistry.org/portal/a/c/s/1/acdisplay.html?DOC=meetings\index.html

American Society for Photobiology



Lux et Vita since 1972

Thank you for your interest in joining the **American Society for Photobiology**. Please print this page, fill out the form, and send it with payment to:

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Membership type:

\$45/yr Associate Member (student/post-doc; online access to *Photochem Photobiol*)

\$120/yr Member (online access to *Photochem Photobiol*)

\$228/2-yrs Member (online access to *Photochem Photobiol*)

\$140/yr Member (printed version and online access to *Photochem Photobiol*)

\$266/2-yrs Member (printed version and online access to *Photochem Photobiol*)

\$60/yr Emeritus (printed version and online access to *Photochem Photobiol*)

\$10/yr Emeritus (online access to *Photochem Photobiol*)

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