

ASP NEWS



Spring 2014

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Note from the Editorial Committee

This is an exciting time for photobiologists since after dozens of months, the next ASP meeting is now right around the corner! By the time this newsletter reaches you, I hope that you all will have submitted abstracts and have been able to make travel arrangements to San Diego. It will be great meeting up with everyone!

I remind all ASP members that any member-generated content is always welcome for inclusion in the newsletter.

-Jonathan Lovell

A photon checks into a hotel.
The bellhop asks, "Can I help
you with your luggage?" It
replies, "I don't have any. I'm
traveling light."

- courtesy: Linda Hardwick

Meet a Photobiologist:

Kendric C. Smith, ASP Founder



*Background: B.S. in Chemistry, Stanford, 1947
Ph.D. in Biochemistry, UC Berkeley, 1952
ASP Founder and President, 1972-1974*

Questions & Answers

Q: What drove you to found the ASP?

A: Well, at the time I was studying UV photobiology and DNA repair. Photobiologists didn't have an American society and UV photobiologists were somewhat "orphans" in the biophysical society. As I got involved with more photobiologists that were scattered around in all different societies I knew there would be an advantage if we could talk to each other and learn from each other. I first started a Northern California photobiology society. Later, when the Photobiology Committee of the National Academy of Sciences was fundraising for an international congress I figured why not start the American Society for Photobiology.

Q: And what was the response?

A: Well, that is how you start things. You just do it and people come. There were other

scientists who doubted it at the time since photobiology wasn't a classical discipline like chemistry or physics. I have said at a previous meeting that photobiology will reach maturity when scientists introduce themselves foremost as photobiologists.

Q: So how do you introduce yourself?

A: As a photobiologist of course.

Q: What were those early days like?

A: There was a lot of excitement. There was interest in all areas of photobiology and it was a really active group. The research was highly diverse and everyone benefited from exchanging ideas and interacting. Sadly, things have gotten split up a bit and some of the smaller groups like photomovement have almost disappeared.

Q: But doesn't ASP still cover a broad spectrum of photobiology research areas?

A: It is supposed to. We used to have council members for all twelve different disciplines that were represented. Now some of those have been merged and photomedicine has become a dominating focus. ASP is a fantastic society for photomedicine, but I worry that the smaller research areas are falling through the cracks. It has always been difficult maintaining a balance in the council between all the diverse areas, but that is what the ASP has to strive to do. Also, sometimes the problem is compounded because members of those smaller fields themselves are difficult to reach out to.

Q: Are you still working at Stanford?

A: I am a professor emeritus. I still use my Stanford email and have emeritus events to attend. My wife was a professor here too. But we are not as active as we used to be. We lived on campus until a couple years ago when we moved to a retirement community nearby.

Q: What research are you still interested in these days?

A: I'm curious about things and still read a lot of scientific magazines. I look into a lot of things, but I am also enjoying my retirement.

Q: And what does retirement entail?

A: I'm a computer nerd and I have done a lot of web pages. I also am a bird-watcher and more recently I have gotten into butterfly-watching. I'm now especially interested in Monarch Butterflies and have a website.

Q: Those hobbies sound like they require patience.

A: I guess patience is required in all activities of life. But bird and butterfly watching is an active hobby and is lots of fun. If it wasn't for bird watching we wouldn't know about all the great local parks nearby here. I took bird classes at night school and now am learning about butterflies

Q: Do these have anything in common with doing scientific research?

A: Well, it comes down to inquisitiveness, which is part of science. Be it birds migratory patterns or butterfly life cycles, it comes down to figuring out how things can possibly do what they do.

Q: Regarding websites, what prompted you to start Photobiological Sciences Online (PSO, <http://photobiology.info>)?

A: I authored or edited 12 books on photobiology. If a chapter in a book needs to be corrected or revised, it takes several years before a new edition is published. But with an online textbook, corrections and additions can be done quickly and easily, and PSO is free. I am always trying to get more authors to write more modules, and for the current authors to revise their modules. I receive letters of appreciation about PSO from all over the world. <http://photobiology.info>

Q: Will you be attending the next ASP meeting in San Diego?

A: No unfortunately, I am wrapped up with things here.

Q: Do you have any advice for younger photobiologists?

A: That's a tough question. Just do whatever research you are most interested in. Pursue it even if it is not the best way to make money because if it makes you happy that is the best thing. In my case, I thought I would be going into medicine, but then I got hooked on biochemistry research and followed my passion by pursuing a PhD and kept on going.

Q: What about advice for the ASP, going forward?

A: Make sure all the disciplines of photobiology are welcome at ASP.

-We reached Kendric Smith via phone at his home in Los Gatos, CA. Additional information about Kendric's work and the history of ASP is available at his website: <http://www.stanford.edu/~kendric> and also:

<http://photobiology.info/ASPHistory/ASPHistory.html>



We need YOU!

Please submit content (science highlights, suggested links, personal stories, etc) to the ASP News.
Email: jflovell@buffalo.edu

Historian's Corner: Musings on scientific conferences

My first exposure to the Scientific Conference experience occurred in the early 1960s when I attended a meeting of 'The Federation', a group of biochemists,

pharmacologists and immunologists that met yearly in the moldy old hotels of Atlantic City.



Boardwalk, 1960

The sight of 20,000 scientists prowling the Boardwalk was something to behold, each bearing a collection of heavy and fragile 3x4 glass slides showing images representing scientific progress. These slides were projected with arc lamps and the unhappy speaker who used heat-sensitive materials was often treated to the sight of his image slowly moving toward the top of the screen as melting proceeded. Later came 2x2 slides (much lighter but easily bent) and finally PowerPoint (can be modified while the talk is being introduced).



Del Coronado, San Diego

Other cities now routinely host scientific meetings, ranging from the mammoth (AACR, AMA, ACS, SPIE) to the minuscule, e.g., ASP. The mega-meetings can be accommodated in only a few places with the monster convention centers, but smaller meetings can spring up almost anywhere. For the MDs, there is an annual magazine showing all of the assorted venues for conferences, along with the proximity of golf courses, fine restaurants, investment counselors, beaches and ski lifts. For the scientists, it's usually a matter of checking out 'Trip Advisor' or Frommer while keeping a careful eye on the budget.



Detroit Plaza, undergoing repairs

The level of conference accommodations can range from the magnificent Del Coronado Hotel in San Diego to the Detroit Plaza (currently undergoing repairs). There are often opportunities for students and impoverished post-docs to stay in quasi-dormitory accommodations while the Profs and conference organizers can opt for better (often spectacular) possibilities.



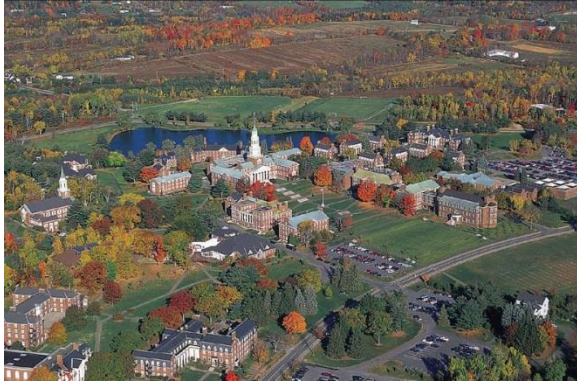
Accommodations for student participants



Accommodations for organizers or professors

Among the places that tend to attract meetings and participants are Boston, Quebec, Montreal, Vancouver, Seattle, San Francisco, San Diego, New Orleans, Washington DC and New York. It will be noticed that these are on the periphery of the US and generally are of sufficient interest that the existence of the meeting may be mainly a pretext for being there. The Gordon Conferences tend to be mainly located in very elegant Junior Colleges in New England. Some of these places appear to otherwise serve as parking places for problem children, with their faculties filled with such ranks as 'Professor of English and Discipline', 'Instructor in German and

Behavior Modification', 'Specialist in Reading and Rehab'.



Typical New England Campus

The best advice is to proceed carefully before signing on for conferences. Any registration fee over \$600 is likely going to support the expenses of the organizers; meetings with more than 1000 participants will likely be scheduling only poster presentations for the untenured. The best bargain is stick with outfits like ASP that (aside from an episode at the San Francisco Airport Motel)* tend to pick interesting places and often try to avoid tropical climates in July.

-David Kessel

**Editor note: The 34th ASP meeting was held at the San Francisco Hyatt Airport in Burlingame CA in 2008.*

Photoreception: For resetting circadian rhythms, neural cooperation is key

Fruit flies are pretty predictable when it comes to scheduling their days, with peaks of activity at dawn and dusk and rest times in between. Now, researchers reporting in the Cell Press journal Cell Reports on April 17th have found that the clusters of brain

cells responsible for each of those activity peaks—known as the morning and evening oscillators, respectively—don't work alone. For flies' internal clocks to follow the sun, cooperation is key.

"Without proper synchronization, circadian clocks are useless or can even be deleterious to organisms," said Patrick Emery from the University of Massachusetts Medical School. "In addition, most organisms have to detect changes in day length to adapt their rhythms to seasons.

"Our work clearly shows that light is detected by individual neurons that then communicate with each other to properly define the phase of circadian behavior," he added. "This emphasizes the importance of neural interaction in the generation of properly phased circadian rhythms."

In the brains of *Drosophila* fruit flies, there are approximately 150 circadian neurons, explained Emery and coauthor Yong Zhang, including a small group of morning oscillators that promote activity early in the day and another group of evening oscillators that promote activity later. Morning oscillators also set the pace of molecular rhythms in other parts of the brain, and hence the phase of circadian behavior. Scientists had thought they did this by relying heavily on their own sensitivity to light—what Emery calls "cell-autonomous photoreception." Indeed, these cells do express fruit flies' dedicated photoreceptor Cryptochrome (CRY). But recent evidence suggested that something was missing from that simple view.

In the new study, the researchers manipulated CRY's ability to function through another clock component, known as JET (short for Jetlag), in different circadian neurons and watched what happened. The

studies show that light detection by the morning oscillators isn't enough to keep flies going about their business in a timely way. They need those evening oscillators too.

JET's role is bigger than expected as well. In addition to enabling cell-autonomous light sensing, the protein also allows distinct circadian neurons to talk to each other in rapid fashion after light exposure, although the researchers don't yet know how.

The new model also suggests that flies and mammals have more similarities than had been appreciated when it comes to synchronizing their activities to the sun, the researchers say. In mammals, specific neurons of the circadian pacemaker of the brain (known as the Suprachiasmatic Nucleus or SCN) receive light input from the retina. Those cells then communicate with pacemaker neurons, which resets the circadian network as a whole.

-source: Cell Press

Employment Opportunities

SENIOR SCIENTIST-PHOTOBIOLOGIST

In Skillman, New Jersey

Johnson & Johnson Consumer Products Company Division of Johnson & Johnson Consumer Companies, Inc. is hiring a Senior Scientist. The Senior Scientist will be responsible for conducting research directed toward discovery and/or development of new technologies in the Sun Innovation Platform. The successful candidate will have demonstrated ability in the following areas: apply concepts of photobiology for clinical research and improved skin health, preparation and delivery of technical presentations; technical writing and publication.

Read more: <http://bit.ly/1m8EmHG>

Contact: Prithwiraj Maitra, Ph.D.,
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The Dangers of Blue Lasers

A wide variety of commercially available high-power blue laser devices can cause serious eye damage, according to a study published by the American Academy of Ophthalmology (AAO) in February.⁷ The study reports various types of maculopathy in 14 young patients who lost vision after brief exposure from a handheld blue laser device (wavelength 450 nm; measured output power 750 mW). It also found that only four of the injured eyes of the patients (29 percent) improved spontaneously, while 10 of the injuries required medical intervention, including vitrectomy (removal of blood and scar tissue).

The FDA, the Laser Institute of America and the American National Standards Institute have released warnings to the public that laser devices with an output power of more than 5 mW can severely damage the retina, even after momentary exposure.

However, handheld lasers of 1200 mW often are advertised online as “children’s entertainment.” Laser “stage show” lighting, common in the nightclub/entertainment industry for lighting up the smoky air with colorful animation, is also commercially available at output powers exceeding those considered eye-safe.

All too often, the actual wattage of the laser devices sold is actually higher than the manufacturers’ claims. The time it takes to cause injury is shorter than the eye’s blink reflex. The researchers who conducted the AO-published study emphasized that

governments should take action, such as banning the importation of these high-power laser devices; consumers should be wary of looking directly at questionable laser sources.

-source: Biophotonics.com

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Aug 10-14, 2014

22nd IUPAC International Conference on
Physical Organic Chemistry
Ottawa (Canada)

<http://events.science.uottawa.ca/icpoc22/welcome.html>

Sep 8-12, 2014

Cordoba, Argentina
16th International Congress on Photobiology

<http://www.photobiology2014.com.ar>



Upcoming Photobiology Events



June 14-18, 2014
Hard Rock Hotel, San Diego CA

ASP Biennial Meeting
REGISTER NOW:

www.photobiology.org

September 9-12, 2014

Arlington, VA,
NAALT (N. American Association for Light
Therapy) & WALT (World Association for
Laser Therapy) Biennial Congress.

Photobiomodulation and beyond

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

Other Event Calendars

SPIE Events: <http://spie.org/x1375.xml>

Plant Biology Events: <http://aspb.org/calendar>

Chemistry Events: <http://www.chemistry.org>

Gordon Research Conferences:
<http://www.grc.org>

Nature Events Directory:

www.nature.com/natureevents/science



37th Meeting of The American Society for Photobiology (ASP 2014)

www.photobiology.org



June 14–19, 2014

Hard Rock Hotel, San Diego, California

Chair: Tayyaba Hasan PhD
Massachusetts General
Hospital
Harvard Medical School
Boston, MA, USA

**Organizing
Committee:**

David Mitchell, PhD
Univ. Texas, USA

Theresa Busch, PhD
Univ. Pennsylvania, USA

Jean Cadet, PhD
CEA, France

Wolfgang Gaertner, PhD
Max-Planck-Institute, Germany

Alexander Greer, PhD
CUNY-BC, USA

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Elbekliniken Buxtehude,
Germany

Henry Lim, MD
Henry Ford Health System,
USA

John Streicher, MS
EPA, USA

Pål Selbo, PhD
The Radium Hospital, Norway



**Enjoy San Diego Attractions: Gaslight District, Sea
Food, SeaWorld and the Famous San Diego Zoo**

Topics include

- Light and Biology in Extreme Environments
- Magnetic Field Effects and Photochemistry
- Angiogenesis and Vascular Biology
- Artificial Tanning: Risks and Benefits
- Cellular Modulation in Photobiology
- Enabling Photobiology in the Dark
- DNA Damage and Repair
- Optomechanical Effects
- Stem Cell Photobiology
- Photodynamic Therapy
- Spiders, Silk and Light
- Nanotechnology
- UV-epigenetics
- Tumor models
- Optogenetics

Networking Events

- Mentoring Lunch
- Posters and Prizes
- ASP-ESP Symposium
- San Diego Tours and outing
- NIH Grant Writing Workshop
- Associate Member Travel Awards
- Awards, Banquet, Reception