ASP NEWS

Connect

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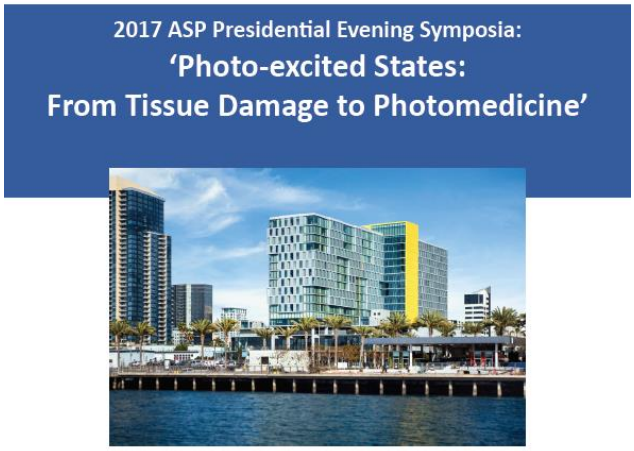
President's Note

Dear ASP members and friends,

It is my pleasure to extend my warm greetings to all of you.

We have just celebrated our society's successful inaugural 2017 ASP Presidential Evening Symposia: 'Photo-excited States: From Tissue Damage to Photomedicine' (San Diego, CA, April 6-7, 2017). Please have a look at this event's final program that is now downloadable from the ASP webpage: http://www.photobiology.org

The ASP focus symposia held on two successive evenings gathered basic and translational researchers presenting cutting edge talks in high quality oral sessions:



Spring Hill Suites San Diego Downtown/Bayfront
900 Bayfront Court, San Diego, CA 92101

Symposium I (Thursday, April 6, 2017): 'Excited states in skin and other tissue damage: Photodamage, photocarcinogenesis, and photochemoprevention'. This symposium examined the mechanistic role of

excited states in mediating tissue damage (focusing on skin and solar exposure) and explores avenues for preventive and therapeutic intervention. Oral presentations were delivered by the following seven speakers: Alexander Greer, Jean Cadet, Georg Wondrak, Patrick J. Rochette, Douglas E. Brash, Yu-Ying He, and Zigang Dong.

Symposium II (Friday, April 7, 2017): 'Excited States in Photomedicine: From Mechanisms to Translation'. This symposium explored exciting new developments in the mechanisms and application of photoexcited states in medicine presented by the following speakers: Keith Cengel, Imran Rizvi, Alexander Greer, Tayyaba Hasan, Conor L. Evans, and Theresa M. Busch.

The personal format of these evening symposia perfectly served the purpose of vibrant roundtable-style discussions that complemented the outstanding presentations.

I am also happy to report that preparations for our 2nd ASP Associate symposium to be held in summer 2017 are advancing rapidly, and we will go online with more information by early May.

Let me also reiterate some of the other upcoming exciting events that ASP will participate in during the course of 2017:

-16th International Photodynamic Association, World Congress, Coimbra, Portugal, June 8-13, 2017; http://www.ipa2017.qui.uc.pt

-13th International Conference on Tetrapyrrole Photoreceptors of Photosynthetic Organisms (ICTPPO) will be held in Chicago, July 9-13, 2017; http://ictppo2017.org.uic.edu

-17th Congress of the European Society for Photobiology (ESP), Pisa (Italy), September 4-8; 2017; pisa2017.photobiology.eu

Lastly, I would like to draw your attention to the upcoming biannual meeting of our society to be held in Tampa, FL, May 12-15, 2018.

I very much hope that you share my excitement about these upcoming activities. Feedback and suggestions etc. are always welcome.

Best regards

GEORG

Georg T. Wondrak, Ph.D.

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ASP Associate Online Symposium

The American Society for Photobiology is excited to announce the second ASP Associate Online Symposium! Readers may have previously recognised this event as the Virtual Poster Symposium, but as the event has expanded since the inaugural event, it was felt a name change was in order.

This event is designed for our Associate members to be involved in a symposium environment without the need for costs in travel and accommodation of physical conferences. The event is held in the intervening years between the biennial meetings. The organisers are pleased to announce that the categories have been increased, with three specific types of events to take part in.

There is the poster category, where entrants will submit an electronic version of a poster that can be viewed online. The second category, which is new for this event, is the poster presentation. This category involves the entrant presenting the poster, rather than just letting the poster speak for itself. This can involve narration recorded to play as the poster is viewed online, or use a video of themselves guiding the viewer through the poster. There are distinct differences between these categories and entrants will need to clarify the criteria which will be provided at the ASP website event page (coming soon!).

The final category is the video by itself. The video category is aimed to be a video for public viewing, not specialised viewing. It will be ideally an educational or outreach video, or a research pitch that a lay person will be able to understand.

The prizes to the event include the winner of each category to be provided the opportunity to be co-chair and/or speaker of Associate lead topical sessions at the 2018 ASP meeting. There is some differences to the prizes awarded for categories this year. There are no longer any combined category prizes, and there are 1st, 2nd and 3rd prizes for each category. The organisers are looking forward to the event and hope that all Associate members will become involved. Further information will be soon available on the website.

Some Frequently Asked Questions are provided below for prospective entrants.

Frequently Asked Questions

Does it cost anything to take part in the Associate Online Symposium?

No, there is no entrance fee.

Do I have to be an Associate member of ASP?

If you want to share your poster, poster presentation or video, and are not an Associate member you can do so. However, if you wish to be considered for a prize, you must be a current Associate Member of the American Society for Photobiology.

I am a full member of the ASP. Can I also enter?

This event is specifically for Associate Members, therefore if you did submit an entry, you will not be eligible for a prize.

Why do I have to submit an abstract prior to taking part in the event?

An abstract is required to ensure that the topic is within the scope of the American Society for Photobiology. This is also normal for any conference

and this event will mimic many aspects of a physical conference.

Does my poster have to be set out as a poster, or can I submit PowerPoint slides to be viewed instead?

PowerPoint slides will not be accepted for judging if submitted as a standalone poster in the poster category. Learning to create a poster is important as it is one large document that must speak for itself.

I want to do my poster presentation using Prezi – can I do this?

If you wish to use Prezi, there must be a copy of the entire standalone poster that can be viewed apart from the presentation (if it has not already been submitted to the poster category). The Prezi presentation should not show a poster that is different to the standalone poster.

What's the difference between the poster presentation and the video?

The key difference is that in the poster presentation category, you will be aiming your presentation of your poster to a scientist not in your field of expertise. It will be technical and provide relevant topical information. You can narrate the presentation to the poster and guide the poster viewer to specific information. You can record narration only, or use screen capture, or record a video of you presenting the poster.

The video category is not aimed at a scientific audience, and must be understandable by a member of the public. The video aims to educate or pitch your research. It should be interesting and entertaining and can be as creative as you can make it.

Do I have to be visible in the video or poster presentation?

No you do not have to have yourself in the video, although the criteria indicates it is desirable. You can provide narration to a screen. The winner of the combined poster and video category in 2015 provided a video with animation and narration. You can view this entry here http://photobiology.org/virtual2015/video.php?id=12.

The prizes are related to the Meeting in 2018. Can I opt to take an equivalent cash prize instead?

No, the prizes are fixed. If you win and cannot accept the prize, the organisers reserve the right to retain the prize and offer to the next ranked candidate. The organisers also have the right to not issue a prize if there is no suitable entry in that category.

How long does the Symposium run for?

The event is currently aiming to be open for at least a three weeks, but is subject to the discretion of the organisers, and may run for longer or shorter than currently advertised. More information will be provided to entrants as we move closer to the event start date.

When is the abstract closing date?

Abstracts will close Monday 29th May, 2017.

Entrants are encouraged to submit their abstract earlier than this to give themselves enough time to make their poster, poster presentation or video.

When does the event start?

A final call for abstracts will occur approximately one month prior to the start of the event which currently aimed to open in early July. An official date will be provided soon.

-Joanna Turner, PhD

Associate Perspective: Paying Attention Behind the Curtain

Eight years ago, a group of actors stood on a dark stage, behind the crimson of the front curtain. Ten months of blood, sweat, and tears had culminated in this moment, as the university's production of Little Shop of Horrors was about to open its first show.

Preparing to debut as the show's Seymour Krelboyne, I contemplated the nature of this nervousness and excitement as the trio sang the musical's well-known opening. For many, this moment seems the culmination of their deepest fears...singing and acting in front of a sea of strangers. However, I felt oddly comforted. I knew my arc, the character's story, and I trusted in the ensemble around me. Frequently, we as movie-watchers and "Netflix-bingers" have become accustomed to picking out an individual performance. However, every actor who has undergone training knows that the performance is always about your partner, about what your character is trying to get out of that person, and about how that person's responses dictate your next action. While any more detail on this approach is probably outside the scope of this piece, the lesson remains: you, as an actor, are nothing without your ensemble. By extension, it makes sense that the better the ensemble around you, the better you as are as an individual.

ASP Associate Richard W. Davis, possibly close to the moment he converted to photobiology

Last year marked my first year as a post-doctoral researcher, and my first year in this new field of photobiology. I came from a background of looking at the "big picture" of infections using molecular imaging and informatics, and transitioned to the Busch lab using the theme "that previous work was about getting light out, this is putting light in." Starting a new field, I knew it would take some time before I knew the people, their science, and felt like a contributor to its work.

Then May rolled around, and with it the American Society of Photobiology's meeting. Shortly after my arrival, I was invited for a beer by our society's president-elect. That same evening, I met a diverse group of researchers from all backgrounds. The next night, I enjoyed pizza with my fellow associate members. The third day came with a chance to get to know some of the more experienced members of the Society, in an event geared towards building mentorship as an ensemble. Now that I know the warmness and compassion of the members of the organization, any initial thoughts of it taking time to feel a part of the ensemble feel foreign to me.

For years, my parents attended my performances, even when the role was a member of the chorus. Especially in those moments, I always appreciated the family and friends that give their support, knowing full well they would probably never be able to pick out my voice from the sea of voices singing at the same time. In fact, to this day, my mom still claims she is tone-deaf. Of course, I would not be playing my part if I sought to stick out from the rest of the group, so that those in attendance would appreciate me. Instead, we sang in

the hopes that combined, our unique voice would create something greater than they would independently. As an attendee at ASP 2016, I witnessed talks from scientists working on skin protection, photodynamic therapy, microscopy, and even circadian rhythms. By providing their unique views, the members of my new ensemble gave me many new solutions to research hurdles that had come up during our work. My research has progressed faster in the five months after the meeting than it did in twice that time prior. But even more than that, I found a warm and inviting group of people who care not just about the science, but about the individual.

Being a new member, I would not attempt to explain what the Society has sought to be in the past years. Instead, I have tried to provide a musing from a first-timer on why we need scientific societies in the first place. In my experience at ASP 2016, the society personifies the parallels I discovered during my training as an actor and scientist. We, as a community of scientists, seek to combine our voices, our talents, and our ideas in order to make the sum stronger. I look forward as a Society member and Associate Councilor to contributing to this mission under the guidance and mentorship of this talented ensemble.

- Richard W. Davis, PhD, ASP Associate

Photobiology Conferences 101

Although the American Society for Photobiology holds a major conference only every two years, there is a mini-ASP symposium in San Diego in early April. This is an entertaining city to explore and the meetings are in the evening so as not to interfere. The photobiology/physics groupie is not, however, confined to only ASP events. There are several other photobiology conferences scheduled for 2017. Some have already occurred but will likely be back in 2018.

Among the more important are the European Society for Photobiology meeting in Pisa (Italy) in September and the International Photodynamic Assn. Portugal (June). The conference seeker has additional choices. The International Union of Photobiology informs us of the existence of many photobiology societies. There is the Italian society (Bologna in March) , the Russian society (no meetings scheduled just now), the French society (meeting in June), the European Photochemistry Assn. (already met in January), the Inter-American Photochemical society (also met in January), the International Commission on Illumination (Korea in October), the Korean Society of Photoscience (details shown only in Korean), the Photomedicine Society (already met) and the World Assn. for Laser Therapy (Coronado CA in February. As noted, many of these conferences have already occurred but the conscientious observer can check back at the IUP website later in 2017 for the 2018 schedule. While English tends to be the ‘language of science’, best to check first before possibly committing to a few days of bewilderment.

SPIE (a photo-engineering group) also lists an impressive collection of conferences for 2017: US, Poland, France, Czech Republic, Australia, Japan, Spain and Germany. A Photodynamic Therapy conference is held in San Francisco every year: late

January or early February. The SPIE meetings tend to be oriented toward instrumentation and clinical aspects and are very well attended. This also affords an opportunity for many of us to experience a few days of wandering around outdoors without 10 layers to clothing.

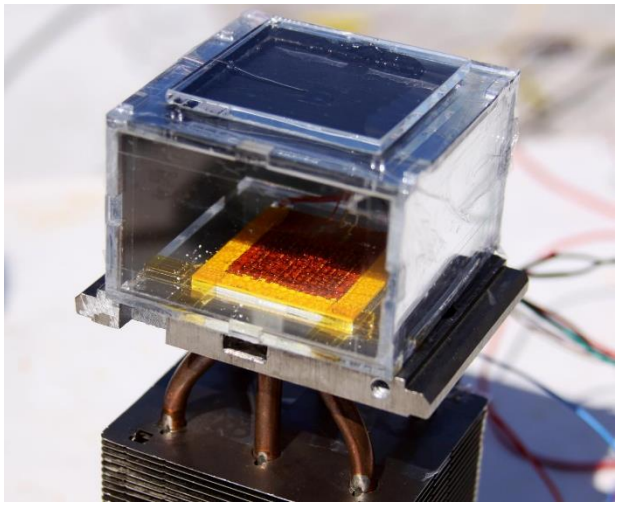
In the field of medicine, one can readily find listings of every medical conference world-wide including data on nearness of golf courses, hotels, restaurants, family events and weather forecasts. Lacking such details, the photobiologist is obliged to hunt down the news. The IUB website (http://www.iuphotobiology.org/other_societies) will provide a helpful assortment. Not covered by this site is the Gordon Conference on Photochemistry (Maine, July). I suspect the biologic aspects will be minimal, but these conferences invariably end with a lobster dinner which is highly recommended.

-David Kessel, PhD

We need YOU!

Please submit content (science highlights, suggested links, personal stories, etc) to ASP News. Email: jflovell@buffalo.edu or Huang.Huang-Chiao@mgh.harvard.edu

Solar device pulls water from air



Water shortages already affect many regions around the world, and are expected to get much worse as the population grows and the climate heats up. But a new technology developed by scientists at MIT and the University of California at Berkeley could provide a novel way of obtaining clean, fresh water almost anywhere on Earth, by drawing water directly from moisture in the air even in the driest of locations.

Technologies exist for extracting water from very moist air, such as “fog harvesting” systems that have been deployed in a number of coastal locations. And there are very expensive ways of removing moisture from drier air. But the new method is the first that has potential for widespread use in virtually any location, regardless of humidity levels, the researchers say. They have developed a completely passive system that is based on a foam-like material that draws moisture into its pores and is powered entirely by solar heat.

The findings are reported in the journal Science by a team from MIT associate professor of mechanical

engineering Evelyn Wang and Berkeley professor Omar Yaghi.

Fog harvesting, which is being used in many countries including Chile and Morocco, requires very moist air, with a relative humidity of 100 percent, explains Wang, who is the Gail E. Kendall Professor at MIT. But such water-saturated air is only common in very limited regions. Another method of obtaining water in dry regions is called dew harvesting, in which a surface is chilled so that water will condense on it, as it does on the outside of a cold glass on a hot summer day, but it "is extremely energy intensive" to keep the surface cool, she says, and even then the method may not work at a relative humidity lower than about 50 percent. The new system does not have these limitations.

For drier air than that, which is commonplace in arid regions around the world, no previous technology provided a practical way of getting water. "There are desert areas around the world with around 20 percent humidity," where potable water is a pressing need, "but there really hasn't been a technology available that could fill" that need, Wang says. The new system, by contrast, is "completely passive — all you need is sunlight," with no need for an outside energy supply and no moving parts.

-source: MIT

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Remembering Lars Svaasand

Professor Lars Othar Svaasand died 23 February 2017, 79 years old. He had a master's degree in electrical engineering from the Norwegian Institute of Technology (NTH) in 1961, and a PhD from the same institution in 1974. Lars Svaasand was employed at the Norwegian Defence Research Establishment 1962-1966, and in SINTEF from 1966-1974. In 1974 he got a position at NTH (later Norwegian University of Science and Technology (NTNU)), he became full professor in 1984, and stayed at NTNU for the rest of his career until he retired in 2008.

Lars Svaasand contributed to forming a generation of electrical engineers in Norway through his lectures in electromagnetics. Stories are told of an enthusiastic lecturer who changed the students' perception of the world. During his career, Lars Svaasand served on the university board and he held the positions of dean and the head of the Department of Electronic Systems at NTNU.

Lars Svaasand will first and foremost be remembered as a great scientist. Being a modest man he seldom spoke of his achievements, which may have caused his name and scientific merits to be less known than deserved. His long and productive research career

covered both theoretical work and applied research in non-linear optics, fiber optics and biomedical optics. His work on lithium niobate crystals early in his career eventually led to the production of optical fibres.

Lars Svaasand was a curiosity driven researcher who covered many applications and fields. He contributed to the early development of photodynamic theory and did research on the properties of brain tumors. Few other Norwegian scientists have left behind them such extensive research. Lars Svaasand was co-authoring several hundred papers and has been cited almost 5000 times up to this date.

The studies that Lars Svaasand undertook within the field of photobiology started with fluorescence diagnostics of early lung cancer together with researchers at UCSB in Santa Barbara, California in 1981. The research group continued the work on characterisation of light propagation in tissue following injected and superficial application of photosensitisers used in PDT. The cooperation with research institutions in California lasted for several decades. Especially important to him became the work with his fellow researchers at the Beckman Laser Institute in Irvine. Here, scientists were gathered from around the world and Lars Svaasand was an essential contributor. His models could predict light- and heat distribution in tumour tissue, and his Trondheim-group of scientists concentrated in particular on brain tumours. This work contributed to improvements in experimental PDT by describing the doses of light and degree of temperature rise in different depths of the tumours.

The research on laser therapy of port-wine stains was another important area. One of the major problems with laser treatments of port-wine stains was the risk of overheating and scar formation. A solution to the problem was found by cooling the skin with liquid cryogen spurts. This idea was an important scientific breakthrough that later also became a commercial success. Furthermore, Lars Svaasand developed algorithms for reflection spectroscopy, and by improving the precision of the characterisation of the reflected light, he has contributed to the development of improved diagnostics and treatment for several conditions.

Lars Svaasand had strong opinions on most issues both in research and on life in general. He loved good discussions, but he was also a careful listener and a very generous person. In addition to being an impressive scientist, Lars Svaasand was a friend and valued colleague for those working with him. He was a warm-hearted and considerate person who cared about everyone. He will be remembered as a person with a positive mind and a good mood, and he will be deeply missed.

- Terje Christensen, PhD, Chairman, Norwegian Society for Photobiology and Photomedicine

Upcoming Photobiology Events

June 8-13, 2017: **16th International Photodynamic Association World Congress.** Coimbra, Portugal. http://www.ipa2017.qui.uc.pt

July 16-21, 2017: **Gordon Conference Photosynthetic Plasticity: From the Environment to Synthetic Systems.** Sunday River, Maine. https://www.grc.org/programs.aspx?id=11914

June 8-13, 2017: **16th International Photodynamic Association World Congress**, Coimbra, Portugal. http://www.ipa2017.qui.uc.pt

July 9-13, 2017: **13th International Conference on Tetrapyrrole Photoreceptors of Photosynthetic Organisms**. Chicago. http://ictppo2017.org.uic.edu

September 4-8; 2017: **17th Congress of the European Society for Photobiology** Pisa (Italy). http://pisa2017.photobiology.eu

ASP biannual meeting

Tampa, FL, May 12-15, 2018