

ASP NEWS



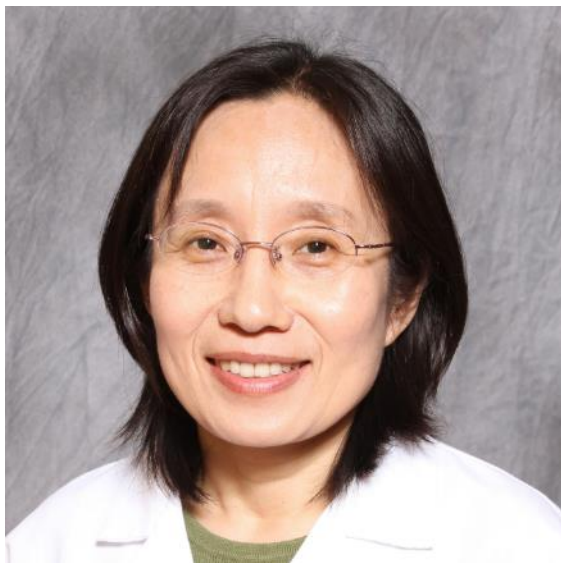
Spring 2019

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President's Note



Dear ASP members and colleagues,

Happy spring! Here I would like to share with you several exciting updates:

1. The second off-year ASP 2019 evening symposia is coming soon, May 9-10, 2019, in Inn of Chicago, Chicago. We have an exciting program in both the Photodamage and Photochemistry sessions featured with dynamic speakers and exciting topics. We have also attracted additional interest from our members to attend the symposia. We are also looking forward to a dynamic program and fruitful interactions. You can find more program details from the meeting website: <http://photobiology.org/2019site/>

2. The ASP will collaborate with the PanAmerican Society for Pigment Cell Research (PASPCR), in the form of joint symposium at the annual or biennial meeting of each society. The first joint symposium will be at the 2019 PASPCR annual meeting on October 2-4, 2019, in Bar Harbor, Maine. All ASP members are welcome to join the meeting. The next plan is to host a PASPCR-ASP joint symposium at our 2020 ASP biennial meeting on June 27-30, 2020, in Chicago.

3. ASP will continue to collaborate with ESP, holding the ASP-ESP joint symposium at the upcoming 2019 ESP-IUPB World Congress. Alec Greer, President Elect, will be the co-chair of the ASP. The joint symposium features photochemists and photobiologists from both the ASP and ESP. All members are welcome to join the 2019 ESP-IUPB World Congress on August 25-30, in Barcelona, Spain. Here is the website: <https://www.photobiology2019.org>.

4. A memorial issue of *Photochemistry and Photobiology* has been organized to honor Dr. Jarod C. Finlay. Jarod was an assistant professor of radiation oncology in the Perelman School of Medicine, University of Pennsylvania. Jarod made substantial contributions to the field of photodynamic therapy in the application of spectroscopy to study photosensitizer photobleaching, tissue optical properties, and tumor hemodynamics. He was a dedicated teacher and a mentor, serving as Director of the Master of Medical Physics Program at the University of Pennsylvania. He was also an Associate Editor for the journal of *Photochemistry and Photobiology*. This memorial issue is planned in celebration of Jarod's many accomplishments as a scientist and teacher. Colleagues active in the fields of photochemistry and photobiology are invited to contribute articles for consideration of publication in this special issue. Please include a cover letter to indicate that the manuscript is intended for the Jarod C. Finlay Memorial Issue. Guidelines for authors can be found at the *Photochemistry and Photobiology* website ([http://onlinelibrary.wiley.com/journal/10.1111/\(ISSN\)1751-1097](http://onlinelibrary.wiley.com/journal/10.1111/(ISSN)1751-1097)). The submission deadline will be August 1, 2019.

Enjoy the beautiful Spring! After a long and cold winter in Chicago, I am fully ready for warm and sunny days.

Yu-Ying

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We need YOU!

Please submit content (science highlights, suggested links, personal stories, etc) to ASP News.
Email: jflovel1@buffalo.edu

Committees

After nearly a year of preparation with the help of our members and the council, we now have reestablished several committees. Here is the information. The chairs and the members of the

committees are looking forward to contribute to the growth and success of the ASP and our ASP members, including our Journal Photochemistry and Photobiology, membership, and our meetings. Each committee will present a report at our semi-annual council meetings. Please send your suggestions and comments to the Chairs of the committees. Your input is always appreciated.

Membership committee

Chair: Alec Greer

AGreer@brooklyn.cuny.edu

Members: Andres Thomas, Sarah Belh, Stas Lekhtman, Sherri McFarland

Publication committee

Chair: Martin Schnermann

martin.schnermann@nih.gov

Members: Alec Greer, Carlos Crespo, Jean Cadet

Sponsorship committee

Chair: Doug Learn

Doug.Learn@crl.com

Members: Damilola Fajuyigbe, Hsing-Wen Wang

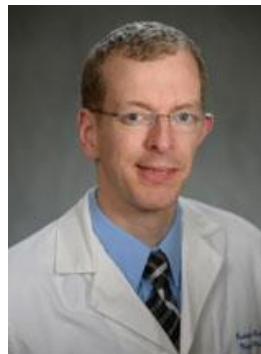
Award committee

Chair: Imran Rizvi. imran.rizvi@unc.edu

Members: David Kessel, Thierry Douki, Tadeusz Sarna, Georg Wondrak, Yu-Ying He, Alec Greer, Sherri McFarland, Lisa Kelly, Huang-Chiao (Joe) Huang, Bryan Spring, Jonathan Lovell, Giuliano Scarcelli

-Yu-Ying He, Ph.D.

Photochemistry and Photobiology Special Issue dedicated to Jarod Finlay



Jarod Finlay: father, husband, son, PDT expert, professor of radiation oncology, associate editor of Photochemistry and Photobiology, and former ASP councilor passed away last year on April 11, 2018. There is an upcoming special issue in his memory. Submission deadline is August 2019.

Jarod Finlay, an assistant professor of radiation oncology in the Perelman School of Medicine, passed away last April 11, 2018 from cancer. He was just 43.

Dr. Finlay, a native of Bryn Mawr, earned his undergraduate degree in math and physics from Alfred University in 1997 and his master's and PhD degrees in physics from the University of Rochester in 1999 and 2004, respectively.

Dr. Finlay joined Penn's department of radiation oncology in 2003. Among his other roles, Dr. Finlay served as the director of the Master of Medical Physics Program. His field of research was photodynamic therapy, a discipline to which he contributed, as author or co-author, more than 120 publications. Dr. Finlay's promotion to associate professor had been approved and was to have taken effect in July.

Dr. Finlay is survived by his wife, Leah; daughters, Mikaela and Anya; parents, Bill and Beth; brothers, Liam and Conor; niece, Fiona; and nephews, Rowan and McCoy.

-UPenn Almanac

First organism with chlorophyll genes that doesn't photosynthesize

For the first time scientists have found an organism that can produce chlorophyll but does not engage in photosynthesis.

The peculiar organism is dubbed 'corallicolid' because it is found in 70 per cent of corals around the world and may provide clues as to how to protect coral reefs in the future.

"This is the second most abundant cohabitant of coral on the planet and it hasn't been seen until now," says Patrick Keeling, a University of British Columbia botanist and senior researcher overseeing the study published in *Nature*. "This organism poses completely new biochemical questions. It looks like a parasite, and it's definitely not photosynthetic. But it still makes chlorophyll."

Chlorophyll is the green pigment found in plants and algae that allows them to absorb energy from sunlight during photosynthesis.

"Having chlorophyll without photosynthesis is actually very dangerous because chlorophyll is very good at capturing energy, but without photosynthesis to release the energy slowly it is like living with a bomb in your cells," Keeling says.

Corallicolids live in the gastric cavity of a wide array of corals responsible for building reefs, as well as black corals, fan corals, mushroom corals, and anemones. They are an apicomplexan, part of a vast group of parasites that have a cellular compartment called a plastid, which is the part of plant and algal cells where photosynthesis takes place. The most famous apicomplexan is *Plasmodium*, the parasite responsible for malaria.



Corallicolids are found in 70 percent of corals around the world.

More than a decade ago, photosynthetic algae related to apicomplexans were discovered in healthy corals, indicating they might have evolved from benign photosynthesising organisms attached to corals before turning into the parasites we know today.

Ecological data showed that coral reefs contain several apicomplexans, but corallicolids, the most common one, had not been studied until now. The organism has revealed a new puzzle: not only does it have a plastid, but it contains all four plastid genes used in chlorophyll production.

"It's quite a head scratcher," says Waldan Kwong, a UBC postdoctoral research fellow and lead author of the study. "We don't know why these organisms are holding on to these photosynthesis genes. It's some novel biology going on here, something we haven't seen before."

The researchers hope further research on corallicolids will provide a more sophisticated understanding of coral habitats and allow us to better preserve them.

-Source: University of British Columbia

Light therapy as a relief from painful side effect of cancer treatment

University at Buffalo researchers received part of a \$1.5 million grant to investigate light therapy as a replacement for prescription opioids in treating oral mucositis, painful ulcers and swelling in the mouth that result from chemotherapy and radiation treatment for cancer.

Funded by the National Institutes of Dental and Craniofacial Research, the grant will help researchers determine the effectiveness of photobiomodulation, a form of low-dose light therapy, in prevention and treatment of oral mucositis after cancer treatment.

The grant was awarded to Cleveland-based MuReva Phototherapy, a spinoff company of lighting solutions manufacturer Lumitex, to further develop the light technology. UB received part of the award to test the technology.

The UB research, led by Praveen Arany, assistant professor in the School of Dental Medicine, will be performed in collaboration with faculty from the departments of Radiation Medicine and Oral Oncology at Roswell Park Comprehensive Cancer Center.

Oral mucositis is caused by damage to mucous tissue from chemotherapy or radiation treatment, or stem cell transplant. The condition occurs in close to 40 percent of patients receiving chemotherapy and nearly 80 percent of patients receiving radiation therapy for cancer, according to the Centers for Disease Control and Prevention. Nearly 70 percent of those receiving stem cell transplants develop mucositis, Arany adds.

Multiple studies have found that patients report oral mucositis as the worst side effect of their cancer treatment. Pain from the condition can slow or delay treatment, and in severe cases require hospitalization and feeding tubes.



Light therapies have existed for decades, but improvements in the technology have made the treatment more affordable for wider use, says Arany.

At a high power, light, often in the form of a laser, is used in medicine to cut or destroy tissue. But at a low level, it has the ability to relieve pain and promote healing.

The effectiveness of photobiomodulation in treating pain and stimulating healing has been documented in hundreds of clinical trials and thousands of academic papers. The treatment is used widely across Europe, Canada, Australia and several other nations. Consensus has not, however, been reached on the proper dosage for the treatment, says Arany.

Using the technology developed by MuReva Phototherapy, UB and Roswell researchers will examine the effectiveness of photobiomodulation treatments for oral mucositis, as well as determine the proper dosage to limit pain and stimulate healing in tissues damaged by cancer treatment.

“Current approaches for delivering a photobiomodulation-utilizing laser for oral mucositis require a physician to spend 30 minutes per patient, per day, and is too impractical an approach for mass adoption,” says Vedang Kothari, president and CEO of MuReva Phototherapy.

“MuReva’s innovative mouthpiece that can be self-administered, simultaneously targets a much larger portion of the oral cavity and delivers a

full treatment in six minutes or less. We believe this technology has the potential to revolutionize the treatment for oral mucositis and finally present a market-ready solution to this debilitating side effect,” Kothari says.

Arany, also president of the World Association for Photobiomodulation Therapy and co-chair of the committee on light therapy for supportive oncology care of the Multinational Association of Supportive Care in Cancer, is an advocate for wider use of photobiomodulation in the United States.

He recently took part in the first congressional briefing on photobiomodulation before the House Science, Space and Technology Committee in Washington, D.C. The briefing, held Oct. 11, 2018, invited a panel of international experts on the therapy to discuss the potential of photobiomodulation to improve health care and lower dependence on opioids.

“The ability of low-dose light therapy to promote healing has been established since the 1960s,” Arany says.

“A major obstacle with its widespread use has been a lack of understanding of its precise biological mechanism. Recent work from our group has outlined both therapeutic and dose-limiting molecular pathways that are aiding development of safe and efficacious clinical protocols.”

Source: University at Buffalo

Upcoming Photobiology Events

ASP 2019 evening symposia
May 9-10, 2019, Chicago
<http://photobiology.org/2019site>

IPA World Congress.
June 28-July 4, 2019, Boston
<https://www.ipaboston2019.org>

Photosynthesis Gordon Research Conference.
July 21-26, 2019, Newry, ME.
<http://www.grc.org/photosynthesis-conference/2019>

17th International Congress on Photobiology & 18th Congress of the European Society for Photobiology,
Aug 25-30, 2019: Barcelona, Spain
<http://www.iuphotobiology.org>

PanAmerican Society for Pigment Cell Research
October 2-4, 2019, Bar Harbor, Maine.
<http://www.paspcr.org/>

ASP 2020 biennial meeting
June 27-30, 2020, Chicago.

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