



Programme Titles Presenters Topics

## Title Index

[A 9 Base Pair Intron deletion in the human XPC DNA repair gene impairs lariat loop formation and causes Exon skipping and multiple skin cancers in XP-C patients](#)

Sikandar Khan<sup>1</sup>, Kyu-Seon Oh<sup>1</sup>, Hiroki Inui<sup>1</sup>, Steffen Emmert<sup>1</sup>, Deborah Tamura<sup>1</sup>, John DiGiovanna<sup>1</sup>, Tala Shahlavi<sup>1</sup>, Carl Baker<sup>3</sup>, Juliet Aiken<sup>2</sup>, Thomas Schneider<sup>2</sup>, Kenneth Kraemer<sup>1</sup>

<sup>1</sup>NCI, United States, <sup>2</sup>NCI, United States, <sup>3</sup>NIAMS Extramural Program, United States

Tuesday, June 24: TAM6-Contributed Papers - D - 11:00AM - 1:00PM

[A homogeneous recoverable sensitizer for singlet oxygen production in aqueous solution](#)

Wenbing Li, Naveen Gandra, Shavelle N. Courtney, Ruomei Gao\*

Jackson State University, United States

Tuesday, June 24: TPM2-Environmental Photobiology - 4:00PM - 6:00PM

[A non-photochemical quenching mutant of chlamydomonas reveals a role for LI818/LHCSR proteins.](#)

Graham Peers<sup>1</sup>, Thuy Truong<sup>1</sup>, Dafna Elrad<sup>2</sup>, Arthur Grossman<sup>2</sup>, Krishna Niyogi<sup>1</sup>

<sup>1</sup>University of California, Berkeley, United States, <sup>2</sup>Carnegie Institute of Washington, United States

Tuesday, June 24: TPM2-Environmental Photobiology - 4:00PM - 6:00PM

[A novel gene in the regulation of the photosynthetic chlorophyll antenna size.](#)

Mautusi Mitra\*, Anastasios Melis

University of California, Berkeley, United States

Tuesday, June 24: TAM5-Aquatic Photobiology - 11:00AM - 1:00PM

[A Photosensory two-component system regulates bacterial cell attachment](#)

Erin Purcell, Dan Siegal-Gaskins, Dave Rawling, Aretha Fiebig, Sean Crosson\*

The University of Chicago, United States

Monday, June 23: MAM2-Blue Light Photoreceptors - 8:30AM - 10:30AM

[A photosynthetic strategy for coping in a high light, low nutrient environment](#)

Katherine Mackey<sup>1</sup>, Adina Paytan<sup>2</sup>, Arthur Grossman<sup>3</sup>, Shaun Bailey<sup>3</sup>

<sup>1</sup>Stanford University, United States, <sup>2</sup>University of California, Santa Cruz, United States, <sup>3</sup>Carnegie Institution of Washington, Plant Biology, United States

Tuesday, June 24: TAM5-Aquatic Photobiology - 11:00AM - 1:00PM

[A review of pharmaceutical photostability testing](#)

Robert Reed

XenoPort, Inc., United States

Tuesday, June 24: TAM4-Pharmaceutical Photochemistry - B - 11:00AM - 1:00PM

[Action Spectra: Why are they important and how are they constructed and interpreted?](#)

Edward De Fabo

The George Washington University Medical Center, United States

Monday, June 23: MPM4-Photobiology School - Action Spectra - 5:30PM - 6:30PM

[Action spectrum conversion factors that change Erythemally weighted to previtamin D3 weighted UV Doses](#)

Stanley Pope<sup>1</sup>, Michael Holick<sup>2</sup>, Steven Mackin<sup>3</sup>, Dianne Godar<sup>4</sup>

<sup>1</sup>Sun Systems & Svc, Inc., United States, <sup>2</sup>Boston School of Medicine, United States, <sup>3</sup>Solartech Inc., United States, <sup>4</sup>US Food and Drug Administration, Center for Devices and Radiological Health, United States

Sunday, June 22: SNAM3-Contributed Papers - B - 8:30AM - 10:30AM

[Activation of TGF beta-1 following low power laser irradiation - a potential mechanism for photobiomodulation](#)

Praveen Arany<sup>1</sup>, David Mooney<sup>1</sup>, Michael Hamblin<sup>2</sup>

<sup>1</sup>Harvard School of Engineering and Applied Sciences, United States, <sup>2</sup>Wellman Center of Photomedicine, United States

Tuesday, June 24: TAM2-Low-Level Light Therapy - 8:30AM - 10:30AM

[Advanced glycation endproducts as Type I photosensitizers in the eye lens](#)

Denis Fuentealba<sup>1</sup>, Bertrand Friguet<sup>2</sup>, Eduardo Silva<sup>1</sup>

<sup>1</sup>Laboratorio de Química Biológica, Departamento de Química Física, Facultad de Química, Pontificia Universidad Católica

de Chile, Chile, <sup>2</sup>Laboratoire de Biologie et Biochimie Cellulaire du Vieillissement, Université Denis Diderot, Paris 7, CC 7128, 2 Place Jussieu, 75251 Paris cedex 05, France  
Posters: Poster session

Advances in understanding photosynthetic efficiency: responding to the challenges of global climate change  
Barry Osmond

*Australian National University, Australia*

Tuesday, June 24: TPM1-ISPR Special Lecture - Advances in Understanding Photosynthesis Efficiency - 3:00PM - 4:00PM

An unorthodox bacteriophytochrome controlling an important bacterial second messenger, c-di-GMP  
Mark Gomelsky

*University of Wyoming, United States*

Saturday, June 21: SAM2-Bacterial Phyochromes - 11:00AM - 1:00PM

Antimicrobial photodynamic therapy (APDT) in treatment of a tuberculosis. The first clinical results  
Nick Vasiliev

*Siberian center of laser medicine, Russian Federation*

Saturday, June 21: SAM4-Contributed Papers - A - 11:00AM - 1:00PM

Application of Chlamydomonas rhodopsins to artificial stimulation of neurons using blue LED

Hironu Yawo<sup>\*1</sup>, Toru Ishizuka<sup>1</sup>, Hiroshi Tomita<sup>2</sup>, Eriko Sugano<sup>2</sup>, Hongxia Wang<sup>1</sup>, Yuka Sugiyama<sup>1</sup>, Hitomi Isago<sup>2</sup>, Makoto Tamai<sup>2</sup>

*<sup>1</sup>Tohoku University Graduate School of Life Sciences, Japan, <sup>2</sup>Tohoku University Institute for International Advanced Interdisciplinary Research, Japan*

Wednesday, June 25: WAM3-Environmental Aspects and Biological Applications of Blue Light Receptors - 8:30AM - 10:30AM

Application of Suzuki reaction for the regioselective synthesis of Meso-Substituted photosensitizers with and without tumor imaging ability

Manivannan Ethirajan\*, Chao Liu, Mahabeer Dobhal, Joseph Missert, Ravindra Pandey  
*Roswell Park Cancer Institute, United States*

Posters: Poster session

Applying the proposed FDA sunscreens rule - an in vitro and in silico assessment of the UVA protection of eight US sunscreens  
Uli Osterwalder<sup>\*1</sup>, Bernd Herzog<sup>1</sup>, Joseph Stanfield<sup>2</sup>

*<sup>1</sup>Ciba Inc., Switzerland, <sup>2</sup>Suncare Research Laboratories, United States*

Tuesday, June 24: TAM4-Pharmaceutical Photochemistry - B - 11:00AM - 1:00PM

Approach toward comprehensive understanding of photosystem II reactions based on the diversity of cyanobacteria.  
Mamoru Mimuro

*Kyoto University, Japan*

Monday, June 23: MPM3-Photobiology in Asia - 2 - 3:00PM- 5:00PM

Aureochrome, the blue light-activated transcription factor, is conserved in Stramenopile algae

Hironao Kataoka\*, Fumio Takahashi, Mié Ishikawa

*Tohoku University, Japan*

Wednesday, June 25: WAM3-Environmental Aspects and Biological Applications of Blue Light Receptors - 8:30AM - 10:30AM

Bacterial bilin- and flavin-binding photoreceptors

Wolfgang Gaertner<sup>1</sup>, Aba Losi<sup>\*2</sup>

*<sup>1</sup>Max Planck Institute for Bioinorganic Chemistry, Germany, <sup>2</sup>Dept. Physics, University of Parma, Italy*

Posters: Poster session

Binding characteristics of a photochromic calcium-chelating naphthopyran

Satish Kumar, Julie Yang, Brenda Hoa, Alison McCurdy\*

*CSU Los Angeles, United States*

Posters: Poster session

Biomedical imaging and therapy applications of nanoparticles

Clemens Burda

*Center for Chemical Dynamics and Nanomaterials Research, Department of Chemistry, United States*

Saturday, June 21: SPM1-KCS - Innovations in Photobiology - 3:00PM - 4:00PM

Biophysical properties of photobleached porcine and cow RPE melanosomes - an in vitro model of aged human RPE melanosomes

Janice Burke<sup>1</sup>, Tadeusz Sarna<sup>2</sup>, Grzegorz Szewczyk<sup>2</sup>, Andrzej Zadło<sup>2</sup>, Mariusz Zareba<sup>\*2</sup>

*<sup>1</sup>Medical College of Wisconsin, United States, <sup>2</sup>Jagiellonian University, Poland*

Monday, June 23: MAM5-Ocular Photobiology - 11:00AM - 1:00PM

Biotechnology of crop plants based on Transgenic Phytochrome Genes

Pill-Soon Song Song<sup>\*1</sup>, Yunjeong Han Kim<sup>2</sup>, Kyungmoon Kim<sup>1</sup>, Jeong-Il Kim<sup>2</sup>

*<sup>1</sup>Cheju National University, Korea, Republic of, <sup>2</sup>Chonnam National University, Korea, Republic of*

Saturday, June 21: SAM2-Bacterial Phyochromes - 11:00AM - 1:00PM

Blue light at 450nm wavelength modulates proliferation and differentiation of human skin cells

Joerg Liebmann<sup>1</sup>, Matthias Born<sup>2</sup>, Victoria Kolb-Bachofen<sup>1</sup>

<sup>1</sup>Institute for Immunobiology, Heinrich-Heine-University, Germany, <sup>2</sup>Institute for Laser and Plasmaphysics, Heinrich-Heine-University, Germany

Monday, June 23: MAM2-Blue Light Photoreceptors - 8:30AM - 10:30AM

Can the night-time atmospheric oxidant NO<sub>3</sub>(dot) damage aromatic amino acids?

Uta Wille\*, Duanne Sigmund

*The University of Melbourne, Australia*

Sunday, June 22: SNAM1-Photooxidation in Proteins - 8:30AM - 10:30AM

Cancer stem cells in murine breast cancer side population are resistant to PDT with photosensitizer substrates of the multiple drug resistance transporter ABCG2

Janet Morgan\*, Ravindra Pandey, Jennifer Jackson, Allan Oseroff

*Roswell Park Cancer Institute, United States*

Wednesday, June 25: WAM5-Photodynamic Therapy - 2 - 11:00AM - 1:00PM

Cationic Fullerenes as photosensitizers for Photodynamic Therapy

Tim Wharton Wharton<sup>1</sup>, Michael R. Hamblin<sup>2</sup>

<sup>1</sup>Lynntech, Inc., United States, <sup>2</sup>Massachusetts General Hospital, United States

Posters: Poster session

Characterising the influence on human UV exposures due to reflective vertical surfaces

Joanna Turner\*, Alfio V Parisi

*University of Southern Queensland, Australia*

Tuesday, June 24: TAM6-Contributed Papers - D - 11:00AM - 1:00PM

Characterization of phytochromes as autophosphorylating kinases

Yun-Jeong Han<sup>1</sup>, A-Young Shin<sup>1</sup>, Pill-Soon Song<sup>2</sup>, Jeong-Il Kim<sup>1</sup>

<sup>1</sup>Chonnam National University, Korea, Republic of, <sup>2</sup>Cheju National University, Korea, Republic of

Monday, June 23: MAM6-Photobiology in Asia - 1 - 11:00AM - 1:00PM

Cholesterol: A multifaceted photooxidizable lipid

Albert Girotti

*Medical College of Wisconsin, United States*

Saturday, June 21: SAM -KCS Interdisciplinary Symposium - 8:30AM - 10:30AM

Closing the vicious cycle of skin cell photo-oxidative stress: The lipid peroxidation-derived protein epitope DHP is a potent UVA-sensitizer

Georg T. Wondrak\*, Christopher M. Cabello, Bobbi L. Anglin, Sara M. Azimian, Sarah D. Lamore

*University of Arizona, College of Pharmacy and Arizona Cancer Center, United States*

Sunday, June 22: SNAM1-Photooxidation in Proteins - 8:30AM - 10:30AM

Combination of photodynamic therapy and surgery for multiple primary lung cancer

Taichiro Ishizumi<sup>1</sup>, Jitsuo Usuda<sup>1</sup>, Shuji Ichinose<sup>1</sup>, Keishi Ohtani<sup>1</sup>, Sachio Maehara<sup>1</sup>, Yoshihiko Tsunoda<sup>1</sup>, Tetsuya Okunaka<sup>2</sup>, Norihiko Ikeda<sup>1</sup>

<sup>1</sup>Department of Thoracic Surgery, Tokyo Medical University Hospital, Japan, <sup>2</sup>Respiratory Disease Center, Sanno Hospital, International University of Health and Welfare, Japan

Posters: Poster session

Crucial role of phospholipase C  $\epsilon$  in ultraviolet B irradiation-induced skin inflammation and skin tumor development

Masahiro Oka\*, Tsuneyoshi Kamo, Hironori Edamatsu, Masanobu Sakaguchi, Makoto Kunisada, Riko Kitazawa, Tohru Kataoka, Chikako Nishigori

*Kobe University Graduate School of Medicine, Japan*

Tuesday, June 24: TPM3-Photocarcinogenesis - 4:00PM - 6:00PM

Cv-pdg Facilitates repair of UVB-Induced DNA damage in skin

Jodi Johnson\*, Brian Lowell, R. Stephen Lloyd, Amanda McCullough

*Oregon Health & Science University, United States*

Posters: Poster session

Cyanobacterial photoreceptors: Crystal structure and spectral properties of AnPixJ\_GAF2

Rei Narikawa<sup>1</sup>, Shigeru Itoh<sup>2</sup>, Genji Kurisu<sup>1</sup>, Masahiko Ikeuchi<sup>1</sup>

<sup>1</sup>The University of Tokyo, Japan, <sup>2</sup>Nagoya University, Japan

Saturday, June 21: SAM2-Bacterial Phyochromes - 11:00AM - 1:00PM

Cyanobacterial Rhodopsins: Light-Driven proton pump GR (Gloeorhodopsin) and ASR (Anabaena Sensory Rhodopsin) for regulating gene expression of photosynthetic pigments

Ah Reum Choi, So Young Kim, Kwang-Hwan Jung\*

*Sogang university, Korea, Republic of*

Monday, June 23: MPM3-Photobiology in Asia - 2 - 3:00PM- 5:00PM

Cytochrome c Oxidation by the phthalocyanine Pc 4 and light: Detection of a unique singlet oxygen derivate product

Myriam Rodriguez\*, Junhwan Kim, Ming Guo, Malcolm Kenney, Nancy Oleinick, Vernon Anderson

Case Western Reserve University, United States

Sunday, June 22: SNAM1-Photooxidation in Proteins - 8:30AM - 10:30AM

Deconstructionist Organic Chemistry: Cleaning Water with Light.

William Jenks

Iowa State University, United States

Tuesday, June 24: TPM2-Environmental Photobiology - 4:00PM - 6:00PM

Detection of blue light receptor genes from metagenomic DNA using a microarray approach

Gopal Pathak<sup>1</sup>, Armin Ehrenreich<sup>3</sup>, Wolfgang Streit<sup>2</sup>, Aba Losi<sup>4</sup>, Wolfgang Gaertner\*<sup>1</sup>

<sup>1</sup>MPI Bioinorganic Chemistry, Germany, <sup>2</sup>Dept Microbiology, Univ. Hamburg, Germany, <sup>3</sup>Dept Microbiology, Univ. Goettingen, Germany, <sup>4</sup>Dept Physics, Univ Parma, Italy

Posters: Poster session

Discrimination of malignant melanoma from malignant melanoma suspicious nevi by non invasive in-vivo NIR-FT Raman spectroscopy.

Peter Philipsen\*, Robert Gniadecki, Hans Christian Wulf

Department of Dermatology, Bispebjerg Hospital, University of Copenhagen, Denmark

Monday, June 23: MAM1-Contributed Paper - F - 8:30AM - 10:30AM

Diversity and evolution of LOV-dependent blue-light signaling proteins

Ulrich Krauss<sup>1</sup>, Bui Quang Minh<sup>2</sup>, Aba Losi<sup>3</sup>, Wolfgang Gaertner\*<sup>4</sup>, Thorsten Eggert<sup>5</sup>, Arndt v. Haeseler<sup>2</sup>, Karl-Erich Jaeger<sup>1</sup>

<sup>1</sup>IMET - FZ Juelich, Germany, <sup>2</sup>Center of Informatics; Univ Vienna, Austria, <sup>3</sup>Dept Physics Univ Parma, Italy, <sup>4</sup>MPI

Bioinorganic Chemistry, Germany, <sup>5</sup>evocaltec, Germany

Posters: Poster session

DNA damage induction and repair in human respiratory epithelium and human epidermis exposed to broadband ultraviolet radiation.

David Mitchell\*<sup>1</sup>, Edina Garaczi<sup>2</sup>, Zsolt Bella<sup>3</sup>, Lajos Kemeny<sup>2</sup>, Andrea Koreck<sup>2</sup>, Guillermo Sanchez<sup>1</sup>

<sup>1</sup>Department of Carcinogenesis, The University of Texas MD Anderson Cancer Center, United States, <sup>2</sup>Department of Dermatology and Allergology, University of Szeged, Hungary, <sup>3</sup>Department of Otolaryngology, Head and Neck Surgery, University of Szeged, Hungary

Monday, June 23: MAM3-Contributed Papers -C - 8:30AM - 10:30AM

DNA repair and photoaging

Daniel Yarosh

AGI Dermatics, United States

Wednesday, June 25: WPM1-Photoimmunology and Photocarcinogenesis-M.Kripke Celebration - 3:00PM - 5:00PM

Drinking green tea prevents UVB-induced immunosuppression through rapid repair of damaged DNA and enhancement of nucleotide excision repair gene expression in mice

Santosh Katiyar\*<sup>1</sup>, Syed Meeran<sup>1</sup>, Harry van Steeg<sup>2</sup>, Thejass Punathil<sup>1</sup>

<sup>1</sup>University of Alabama at Birmingham,, United States, <sup>2</sup>National Institute of Public Health and the Environment, Netherlands

Wednesday, June 25: WAM1-Nutriceuticals in Photobiology - 8:30AM - 10:30AM

Drug Photodegradation in the Solid State: Unexpected Photochemistry Observed in a Lyophilized Product

Steven Baertschi

Lilly Corporate Center, United States

Tuesday, June 24: TAM1-ASP/PPS-Pharmaceutical Photochemistry - A - 8:30AM - 10:30AM

Dynamic molecular responses of plants to photon

Jeongsik Kim<sup>1</sup>, Sung Hyun Hong<sup>1</sup>, Yumi Kim<sup>1</sup>, Hyunmo Choi<sup>1</sup>, Miji Yeom<sup>1</sup>, Suyeong Jeong<sup>1</sup>, Jong Sang Ryu<sup>3</sup>, Dong Su Kim<sup>4</sup>, Hong Gil Nam\*<sup>2</sup>

<sup>1</sup>Division of Molecular and Life Sciences, Pohang University of Science and Technology, Korea, Republic of, <sup>2</sup>School of Interdisciplinary Biosciences and Bioengineering, Pohang University of Science and Technology, Korea, Republic of, <sup>3</sup>Division of Bio & Health, Samsung Advanced Institute of Technology, Korea, Republic of, <sup>4</sup>Genomine Research Division, Genomine, Inc, Korea, Republic of

Monday, June 23: MAM6-Photobiology in Asia - 1 - 11:00AM - 1:00PM

Dynamics of ultrastructural changes in the isolated neuron under photodynamic impact

Anatoly Uzdensky

Institute of Neurocybernetics, Russian Federation

Posters: Poster session

Economic benefit of increased vitamin D

William Grant

*SUNARC, United States*

Saturday, June 21: SAM3-Vitamin D/UVB - 11:00AM - 1:00PM

Effect of fluence rate on tumor metabolism during PDT of tumors in rats evaluated by Positron Emission Tomography (PET) and Magnetic Resonance Imaging (MRI).

Kim Mongrain\*, Jacques A. Rousseau, Christian Thibaudeau, Luc Tremblay, Martin Lepage, Roger Lecomte, Johan E. van Lier  
*Université de Sherbrooke, Canada*

Monday, June 23: MAM1-Contributed Paper - F - 8:30AM - 10:30AM

Effect of H-type colorant aggregation on the photostability of liquid formulations.

Guilherme Indig

*University of Wisconsin, Department of Chemistry and Biochemistry, United States*

Tuesday, June 24: TAM1-ASP/PPS-Pharmaceutical Photochemistry - A - 8:30AM - 10:30AM

Effects of chitosan nanoparticles on the uptake and phototoxicity of delta-aminolevulinic acid

Maria Perde-Schrepler\*<sup>1</sup>, Ioana Brie<sup>1</sup>, Piroška Virag<sup>1</sup>, Ion Dan Postescu<sup>1</sup>, Olga Soritau<sup>1</sup>, Eva Fischer-Fodor<sup>1</sup>, Gabriela Chereches<sup>1</sup>, Corina Tatomir<sup>1</sup>, Simina Dreve<sup>2</sup>

<sup>1</sup>*Oncologic Institute I.Chiricuta, Romania*, <sup>2</sup>*National Institute for Research and Development of Isotopic and Molecular Technologies, Romania*

Posters: Poster session

Effects of topically-applied hydroxyacids on UV-Induced erythema assessed by Digital Image Analysis (DIA).

RongRong WEI\*, Donnie Lowther, Andrija Kornhauser

*FDA, United States*

Posters: Poster session

Elucidating the mechanisms of photodynamic therapy induced endothelial cell morphological and functional change.

Priyanka Agharkar\*, Bin Chen

*University of the Sciences in Philadelphia, United States*

Saturday, June 21: SAM4-Contributed Papers - A - 11:00AM - 1:00PM

Enabling plants to tolerate the shade with bathochromic Phytochromes A

Yun-Jeong Han<sup>1</sup>, Yong-Min Kim\*<sup>1</sup>, Min-Gon Kim<sup>1</sup>, Jeong-Il Kim<sup>1</sup>, Pill-Soon Song<sup>2</sup>

<sup>1</sup>*Chonnam National University, Korea, Republic of*, <sup>2</sup>*Cheju National University, Korea, Republic of*

Posters: Poster session

Evaluation of angiogenic markers in vascular and cellular mediated photodynamic therapy using hypericin

Ramaswamy Bhuvanewari\*<sup>1</sup>, Yik Yuen Gan<sup>2</sup>, Sasidharan Swarnalatha Lucky<sup>1</sup>, William Wei Lim Chin<sup>1</sup>, Mohamed Ali-Seyed<sup>1</sup>, Khee Chee Soo<sup>1</sup>, Malini Olivo<sup>1</sup>

<sup>1</sup>*National Cancer Centre, Singapore*, <sup>2</sup>*Nanyang Technological University, Singapore*

Posters: Poster session

Evolving paradigms for processing DNA photoproducts in bacteria and in human cells

Philip C. Hanawalt

*Stanford University, United States*

Monday, June 23: MPM1-ASP/ESP-Mechanisms of DNA Damage & Repair - 3:00PM - 5:00PM

Excited-state structural dynamics and photochemistry of pyrimidine nucleobases

Glen R. Loppnow

*University of Alberta, Canada*

Monday, June 23: MPM2-Raman Spectroscopy and Photobiology - 3:00PM - 5:00PM

Exposure of human reconstructed skin to low dose of daily ultraviolet radiation revealed a different oxidative stress response in keratinocytes and fibroblasts.

Claire Marionnet\*, Cécile Pierrard, Juliette Sok, François Lejeune, Marie Thomas, Françoise Bernerd

*L'Oreal Recherche, France*

Posters: Poster session

Exposure to sun and sun beds - advantages versus risk for health

Alina Carmen Porojnicu\*, Zoya Lagunova, Johan Moan

*Norwegian Radium Hospital, Norway*

Saturday, June 21: SAM3-Vitamin D/UVB - 11:00AM - 1:00PM

Extracorporeal photopheresis in atopic dermatitis

Peter Wolf

*Department of Dermatology, Medical University of Graz, Austria*

Sunday, June 22: SNAM2-Extracorporeal Photoimmunotherapy- Photopheresis - 8:30AM - 10:30AM

Extracorporeal photopheresis reverses experimental graft-versus-host disease through regulatory T cells

Erin Gatzka\*, James Ferrara

*University of Michigan, United States*

Sunday, June 22: SNAM2-Extracorporeal Photoimmunotherapy- Photopheresis - 8:30AM - 10:30AM

Femtosecond stimulated Raman spectroscopy

Richard Mathies

University of California, Berkeley, United States

Monday, June 23: MPM2-Raman Spectroscopy and Photobiology - 3:00PM - 5:00PM

Ferric Chloride mediated oxidation of bacteriochlorins. first synthesis of pyrrole "B" reduced Free-base and Metallated Photosensitizers for Tumor-Imaging and Photodynamic Therapy (PDT)

Chao Liu<sup>\*1</sup>, Mahabeer Dobhal<sup>1</sup>, Tymish Ohulchansky<sup>2</sup>, Janet Morgan<sup>3</sup>, Yihui Chen<sup>1</sup>, Joseph Missert<sup>1</sup>, Munawwar Sajad<sup>4</sup>, Hani Nabi<sup>4</sup>, Ulas Sunar<sup>1</sup>, William Potter<sup>1</sup>, Earl Bergey<sup>2</sup>, Paras Prasad<sup>2</sup>, Allan Oseroff<sup>3</sup>, Ravindra Pandey<sup>1</sup>

<sup>1</sup>PDT Center, Roswell Park Cancer Institute, United States, <sup>2</sup>Institute of Lasers, Photonics and Biophotonics, United States, <sup>3</sup>Department of Dermatology, Roswell Park Cancer Institute, United States, <sup>4</sup>Department of Nuclear Medicine, SUNY, United States

Monday, June 23: MAM1-Contributed Paper - F - 8:30AM - 10:30AM

Fluorescence diagnostic imaging of lesions in the human oral cavity using hypericin

Patricia Soo-Ping Thong<sup>\*1</sup>, William Wei-Lim Chin<sup>1</sup>, Ramaswamy Bhuvaneshwari<sup>1</sup>, Kiang-Wei Kho<sup>1</sup>, Kent Mancner<sup>2</sup>, Malini Olivo<sup>1</sup>, Khee-Chee Soo<sup>1</sup>

<sup>1</sup>National Cancer Centre, Singapore, <sup>2</sup>Changi General Hospital, Singapore

Sunday, June 22: SNAM3-Contributed Papers - B - 8:30AM - 10:30AM

Fluorescence kinetics and drug transport of chlorin e6 - polyvinylpyrrolidone for photodynamic applications of urological cancer

William Wei Lim Chin<sup>\*1</sup>, Paul Wan Sia Heng<sup>2</sup>, Weber Kam On Lau<sup>3</sup>, Pei Li Lim<sup>3</sup>, Ramaswamy Bhuvaneshwari<sup>1</sup>, Patricia Soo Ping Thong<sup>1</sup>, Malini Olivo<sup>1</sup>

<sup>1</sup>Division of Medical Sciences, National Cancer Centre Singapore, Singapore, <sup>2</sup>Department of Pharmacy, National University of Singapore, Singapore, <sup>3</sup>Department of Urology, Singapore General Hospital, Singapore

Wednesday, June 25: WAM5-Photodynamic Therapy - 2 - 11:00AM - 1:00PM

Fluorescence lifetime of hypericin has an important role for determination of its biological activity inside the cells.

Veronika Huntosova<sup>\*1</sup>, Franck Sureau<sup>2</sup>, Zuzana Nadova<sup>1</sup>, Pavol Miskovsky<sup>1</sup>

<sup>1</sup>University P. J. Safarik, Slovakia, <sup>2</sup>University P. & M. Curie, France

Monday, June 23: MAM1-Contributed Paper - F - 8:30AM - 10:30AM

Formation and accumulation of damaged proteins within cells: evidence for a key role for protein peroxides in cellular damage.

Michael Davies\*, Michelle Gracanin, Aldwin Suryo Rahmanto

The Heart Research Institute, Australia

Sunday, June 22: SNAM1-Photooxidation in Proteins - 8:30AM - 10:30AM

Functional analysis of photoactivated Adenylyl Cyclase alpha (PACa) from euglena gracilis

Jens Looser<sup>\*1</sup>, Saskia Schroeder-Lang<sup>2</sup>, Masakatsu Watanabe<sup>3</sup>, Peter Hegemann<sup>4</sup>, Georg Nagel<sup>1</sup>

<sup>1</sup>Universitaet Wuerzburg, Julius-von-Sachs-Institut fuer Biowissenschaften, Germany, <sup>2</sup>Max-Planck-Institut fuer Biophysik, Germany, <sup>3</sup>National Institute for Basic Biology, Japan, <sup>4</sup>Humboldt Universitaet zu Berlin, Experimentelle Biophysik, Germany

Wednesday, June 25: WAM3-Environmental Aspects and Biological Applications of Blue Light Receptors - 8:30AM - 10:30AM

Functional melanocortin 1 receptor (MC1R) is not necessary for an inflammatory response to UV radiation in adult mouse skin

Agnieszka Wolnicka-Glubisz, Frances Noonan\*, Edward De Fabo

EOH/SPHHS, The George Washington University, United States

Posters: Poster session

Functional transplant of photoactivated adenylyl cyclase (PAC) into Aplysia sensory neurons

Tatsumi Nagahama<sup>1</sup>, Takeshi Suzuki<sup>2</sup>, Shinya Yoshikawa<sup>3</sup>, Mineo Iseki<sup>\*2</sup>

<sup>1</sup>Toho University, Japan, <sup>2</sup>Graduate University for Advanced Studies, Japan, <sup>3</sup>Fukui Prefectural University, Japan

Wednesday, June 25: WAM3-Environmental Aspects and Biological Applications of Blue Light Receptors - 8:30AM - 10:30AM

G+C content of genomes is a key parameter for the distribution of UVB-induced bipyrimidine DNA photoproducts

Thierry DOUKI<sup>\*1</sup>, Sabine Matallana-Surget<sup>2</sup>, Jarah A. Meador<sup>3</sup>, Fabien Joux<sup>2</sup>

<sup>1</sup>CEA-INaC/SCIB, France, <sup>2</sup>CNRS & Université Paris VI UMR 7621, France, <sup>3</sup>Columbia University, United States

Wednesday, June 25: WAM4-Contributed Papers - E - 11:00AM - 1:00PM

Geometry conversion factors that change UV doses relative to the horizontal plane to doses Relevant to the human body

Stanely Pope<sup>1</sup>, John Streicher<sup>2</sup>, Dianne Godar<sup>\*3</sup>

<sup>1</sup>Sun Systems & Svc, Inc., United States, <sup>2</sup>National Oceanic and Atmospheric Administration, United States, <sup>3</sup>Food and Drug Administration, United States

Saturday, June 21: SAM4-Contributed Papers - A - 11:00AM - 1:00PM

Hairless mouse with UV-induced skin tumors as a model for chemo- and photo- therapy of cancer.

Max Myakishev

URMC, United States

Posters: Poster session

Hierarchy of repair of the different cyclobutane pyrimidine dimers in human skin and cultured cells

Thierry Douki<sup>1</sup>, Stephane Mouret<sup>1</sup>, Marie Cherveron<sup>2</sup>, Jean Cadet<sup>1</sup>, Alain Favier<sup>1</sup>

<sup>1</sup>CEA-INA/C/SCIB, France, <sup>2</sup>Institut de Recherche Pierre Fabre, France

Monday, June 23: MPM1-ASP/ESP-Mechanisms of DNA Damage & Repair - 3:00PM - 5:00PM

How actin works in chloroplast photorelocation movement?

Masamitsu Wada

National Institute for Basic Biology, Japan

Monday, June 23: MPM3-Photobiology in Asia - 2 - 3:00PM- 5:00PM

How blue light regulates kinase activity of phototropin

Satoru Tokutomi<sup>1</sup>, Daisuke Matsuoka<sup>2</sup>, Kazunori zikihara<sup>1</sup>, Koji Okajima<sup>1</sup>, Hitomi Katsura<sup>1</sup>, Shizue Yoshihara<sup>1</sup>, Masayoshi Nakasako<sup>3</sup>

<sup>1</sup>Osaka Prefecture University, Japan, <sup>2</sup>Kobe University, Japan, <sup>3</sup>Keio University, Japan

Monday, June 23: MPM3-Photobiology in Asia - 2 - 3:00PM- 5:00PM

How does UVR exposure dose and behavior in spring and summer influence on vitamin D level in autumn and winter?

Elisabeth Thieden\*, Peter Alshede Philipsen, Hans Christian Wulf

Department of Dermatology, Bispebjerg Hospital, University of Copenhagen, Denmark

Monday, June 23: MAM1-Contributed Paper - F - 8:30AM - 10:30AM

Identification of free radicals induced by UV irradiation in collagen water solutions

Marine Dgebuadze<sup>1</sup>, Nunu Metreveli<sup>1</sup>, Louisa Namicheishvili<sup>2</sup>, Keteven Jariashvili<sup>2</sup>, Eduard Chikvaidze<sup>2</sup>, Alina Sionkowska<sup>3</sup>

<sup>1</sup>Ilia Chavchavadze State University, Georgia, <sup>2</sup>Iv. Javakishvili Tbilisi State University, Georgia, <sup>3</sup>Nicolas Copernicus University, Poland

Posters: Poster session

Imaging of DNA nanoparticles with tunable fluorescent nanocrystals for gene delivery monitoring

Anna Cristina Samia<sup>1</sup>, Xuguang Chen<sup>1</sup>, Wenchao Sun<sup>1</sup>, Clemens Burda<sup>2</sup>, Pamela Davis<sup>1</sup>

<sup>1</sup>Division of Pediatric Pulmonology, School of Medicine, Case Western Reserve University, United States, <sup>2</sup>Center for Chemical Dynamics and Nanomaterials Research, Department of Chemistry, Case Western Reserve University, United States

Monday, June 23: MAM4-Imaging Techniques and Probes - 11:00AM - 1:00PM

In vitro phototoxicity testing: a task involving multiple endpoints

Laurent Marrot\*, Jean-Philippe Belaidi, Christophe Jones, Anita Labarussiat, Philippe Perez, Jean-Roch Meunier

L'Oreal Research, France

Tuesday, June 24: TAM1-ASP/PPS-Pharmaceutical Photochemistry - A - 8:30AM - 10:30AM

Indocyanine Green enhanced non-invasive laser thermal ablation of experimental breast carcinoma

Robert Griffin\*, Cassie Jackson, Jeffrey Myhill, Petr Novak, Gal Shafirstein

University of Arkansas for Medical Sciences, United States

Tuesday, June 24: TAM6-Contributed Papers - D - 11:00AM - 1:00PM

Interaction between 7-mercapto-4-methylcoumarin and CdSe quantum dots

María González-Béjar\*, Mathieu Frenette, Juan Cesar Scaiano

University of Ottawa, Canada

Monday, June 23: MAM3-Contributed Papers - C - 8:30AM - 10:30AM

Interactive effects of elevated CO<sub>2</sub> and UV exposure on microalgal photosynthesis

Patrick Neale<sup>1</sup>, Cristina Sobrino<sup>2</sup>, Robert Moeller<sup>3</sup>

<sup>1</sup>Smithsonian Env. Res. Ctr, United States, <sup>2</sup>Univ. Vigo, Spain, <sup>3</sup>Miami Univ. Ohio, United States

Tuesday, June 24: TAM5-Aquatic Photobiology - 11:00AM - 1:00PM

Interplay of lysosomes and mitochondria in photodynamic therapy-induced death of cancer cells

Anna-Liisa Nieminen<sup>1</sup>, Jennifer Frye<sup>1</sup>, Geraldine Quiogue<sup>1</sup>, Kashif Azizuddin<sup>2</sup>, Ping Zhang<sup>2</sup>, Malcolm Kenney<sup>2</sup>, Peter Padiaditakis<sup>3</sup>, John Lemasters<sup>1</sup>, Nancy Oleinick<sup>2</sup>

<sup>1</sup>Medical University of South Carolina, United States, <sup>2</sup>Case Western Reserve University, United States, <sup>3</sup>University of North Carolina, United States

Tuesday, June 24: TAM3-Photodynamic Therapy - 1 - 8:30AM - 10:30AM

Intravital microscopic analysis of vascular perfusion and macromolecule extravasation after photodynamic vascular targeting therapy

Chong He<sup>1</sup>, Priyanka Agharkar<sup>1</sup>, Bin Chen<sup>1</sup>

<sup>1</sup>University of the Sciences in Philadelphia, United States, <sup>2</sup>University of Pennsylvania, United States

Tuesday, June 24: TAM6-Contributed Papers - D - 11:00AM - 1:00PM

Investigating the role of adenine in the FAD of DNA photolyase

Madhavan Narayanan\*, Robert Stanley

Temple University, United States

Posters: Poster session

Isolation and characterization of photosynthetic chlorophyll antenna mutants by DNA insertional mutagenesis.

Henning Kirst\*, Anastasios Melis

University of California at Berkeley, United States

Tuesday, June 24: TAM5-Aquatic Photobiology - 11:00AM - 1:00PM

Levels of retinyl palmitate and retinol in the skin and liver of SKH-1 mice topically treated with retinyl palmitate and concomitant exposure to simulated solar light for thirteen weeks

Qingsu Xia<sup>1</sup>, Jian Yan<sup>1</sup>, Mary Boudreau<sup>1</sup>, Alan Warbritton<sup>2</sup>, Paul Howard<sup>1</sup>, Peter Fu<sup>1</sup>

<sup>1</sup>National Center for Toxicological Research, FDA, United States, <sup>2</sup>Toxicological Pathology Association, United States

Posters: Poster session

Life and death pathways for the UV DNA damage response in the S phase of human cells

James Cleaver\*, Imenne Boubaker, Luzviminda Feeney, Sebastien de Feraudy

University of California, United States

Monday, June 23: MPM1-ASP/ESP-Mechanisms of DNA Damage & Repair - 3:00PM - 5:00PM

Light dosimetry for esophageal photodynamic therapy.

Linda Jones

College of Charleston, United States

Saturday, June 21: SPM2-Presidents Lectures - 4:00PM - 5:30PM

Light sensing in the fungi

Alexander Idnurm

University of Missouri-Kansas City, United States

Monday, June 23: MAM2-Blue Light Photoreceptors - 8:30AM - 10:30AM

Long-range molecular alignment across the surface of Sepia melanosomes

John Simon\*, Dana Peles

Duke University, United States

Sunday, June 22: SNAM4-Award Lectures - 11:00AM - 1:00PM

Low Level Light Therapy for wound healing: Basic mechanisms and animal models

Michael Hamblin<sup>1</sup>

<sup>1</sup>Wellman Center for Photomedicine, Massachusetts General Hospital, United States, <sup>2</sup>Department of Dermatology, Harvard Medical School, United States, <sup>3</sup>Harvard-MIT Division of Health Sciences and Technology, United States

Tuesday, June 24: TAM2-Low-Level Light Therapy - 8:30AM - 10:30AM

LZF1, a light and HY5-regulated transcriptional factor, functions in Arabidopsis de-etiolation

Shu-Hsing Wu\*, Chiung-swey Chang, Li-Teh Chen

Institute of Plant and Microbial Biology, Academia Sinica, Taiwan

Monday, June 23: MAM6-Photobiology in Asia - 1 - 11:00AM - 1:00PM

Making Quantum Dots more luminescent by Sulfur photocuring without compromising sensor response

Laetitia Rene-Boisneuf\*, J. C. Scaiano

University of Ottawa, Canada

Tuesday, June 24: TAM6-Contributed Papers - D - 11:00AM - 1:00PM

Making schools safe for UV hypersensitive students

Robert Sayre<sup>2</sup>, John Dowdy<sup>1</sup>

<sup>1</sup>Rapid Precision Testing Laboratories, United States, <sup>2</sup>Dept Dermatology Div. Medicine, Univ Tenn Center for Health Sciences, United States

Sunday, June 22: SNAM3-Contributed Papers - B - 8:30AM - 10:30AM

MAS NMR analysis of the photochemical machinery of the photoreceptor phytochrome

Thierry Rohmer<sup>1</sup>, Jon Hughes<sup>2</sup>, Wolfgang Gärtner<sup>3</sup>, Jörg Matysik<sup>1</sup>

<sup>1</sup>Leiden University, Netherlands, <sup>2</sup>Justus-Liebig-Universität, Germany, <sup>3</sup>Max-Planck-Institut für Bioanorganische Chemie, Germany

Saturday, June 21: SAM2-Bacterial Phytochromes - 11:00AM - 1:00PM

Mast cell-derived IL-10 limits skin pathology associated with chronic low-dose ultraviolet B-irradiation

Michele Grimaldeston<sup>2</sup>, Susumu Nakae<sup>1</sup>, Janet Kalesnikoff<sup>1</sup>, Mindy Tsai<sup>1</sup>, Stephen Galli<sup>1</sup>

<sup>1</sup>Stanford University, United States, <sup>2</sup>IMVS/Hanson Institute, Australia

Saturday, June 21: SAM4-Contributed Papers - A - 11:00AM - 1:00PM

Measurement of solar UVB exposures in sea water with a high - exposure dosimeter

Peter Schouten\*, Alfio Parisi, David Turnbull

University Of Southern Queensland, Australia

Tuesday, June 24: TAM5-Aquatic Photobiology - 11:00AM - 1:00PM



Mechanisms of bystander signaling following photodynamic stress

Noemi Rubio\*, Robert W. Redmond

*Wellman Center for Photomedicine, Harvard Medical School, Massachusetts General Hospital, United States*

Tuesday, June 24: TAM3-Photodynamic Therapy - 1 - 8:30AM - 10:30AM

Mechanisms of enhancement of Anti-Tumor immunity by PDT: Role of inflammatory mediators

Sandra O. Gollnick\*, Craig Brackett

*Roswell Park Cancer Inst., United States*

Wednesday, June 25: WAM5-Photodynamic Therapy - 2 - 11:00AM - 1:00PM

Mechanisms of UV-induced melanoma

Frances Noonan\*<sup>1</sup>, Jesse Bahn<sup>1</sup>, Agnieszka Wolnicka-Glubisz<sup>1</sup>, Heather Poetschke-Klug<sup>1</sup>, Miriam Anver<sup>2</sup>, Glenn Merlino<sup>3</sup>, Edward De Fabo<sup>1</sup>

*<sup>1</sup>EOH/SPHHS, The George Washington University, United States, <sup>2</sup>SAIC NCI-Frederick, United States, <sup>3</sup>Laboratory of Cancer Biology & Genetics, NCI/NIH, United States*

Wednesday, June 25: WPM1-Photoimmunology and Photocarcinogenesis-M.Kripke Celebration - 3:00PM - 5:00PM

Mice drinking goji berry juice are protected against photoimmune suppression via haem oxygenase induction

Vivienne E. Reeve\*, Munif Allanson, Diane Domanski

*University of Sydney, Australia*

Wednesday, June 25: WAM1-Nutriceuticals in Photobiology - 8:30AM - 10:30AM

Mitochondrial distribution in photoreceptors make them a candidate for oxidative damage, and for photobiological repair

Jonathan Stone<sup>1</sup>

*<sup>1</sup>University of Sydney, Australia, <sup>2</sup>Australian National University, Australia*

Tuesday, June 24: TAM2-Low-Level Light Therapy - 8:30AM - 10:30AM

Mitochondrial redox activation of cytochrome c by cardiolipin: An apoptotic gateway.

Valerian Kagan

*University of Pittsburgh, United States*

Wednesday, June 25: WAM2-ASP/RRS-Mitochondrial ROS - 8:30AM - 10:30AM

Mode of action in ECP: An update on the role of regulatory T cells

Thomas Schwarz

*Department of Dermatology, Germany*

Sunday, June 22: SNAM2-Extracorporeal Photoimmunotherapy- Photophoresis - 8:30AM - 10:30AM

Molecular and cellular mechanisms of photocarcinogenesis

Stefan Beisert

*University of Muenster, Germany*

Wednesday, June 25: WPM1-Photoimmunology and Photocarcinogenesis-M.Kripke Celebration - 3:00PM - 5:00PM

Motexafin Lutetium mediated PDT for recurrent prostate cancer.

Keith Cengel\*, Kevin Du, Hiram Patel, Rosie Mick, Timothy Zhu, Jarod Finlay, Theresa Busch, Stephen Hahn, S. Bruce Malkowicz

*University of Pennsylvania, United States*

Wednesday, June 25: WAM5-Photodynamic Therapy - 2 - 11:00AM - 1:00PM

Multimode optical imaging system for In Vivo chemotherapy assessment in small animals

Jae Youn Hwang\*<sup>1</sup>, Julia Ljubimova<sup>2</sup>, Lali K. Medina-Kauwe<sup>2</sup>, Daniel L. Farkas<sup>2</sup>

*<sup>1</sup>University of Southern California, United States, <sup>2</sup>Cedars-Sinai Medical Center, United States*

Monday, June 23: MAM4-Imaging Techniques and Probes - 11:00AM - 1:00PM

Mutations affecting the GTP/ATP binding properties of the blue-light sensor YtvA

Aba Losi\*<sup>2</sup>, Wolfgang Gaertner<sup>1</sup>, Elsa Livoti<sup>2</sup>, Yifen Tang<sup>1</sup>, Zhen Cao<sup>1</sup>, Ulrich Krauss<sup>3</sup>

*<sup>1</sup>Max Planck Institute for Bioinorganic Chemistry, Germany, <sup>2</sup>Dept. Physics, University of Parma, Italy, <sup>3</sup>Forschungszentrum Juelich, Germany*

Monday, June 23: MAM2-Blue Light Photoreceptors - 8:30AM - 10:30AM

Neonatal exposure to ultraviolet radiation leads to immune suppression, potentially mediated by T regulatory cells

Heather McGee\*<sup>1</sup>, H.K. Muller<sup>1</sup>, Greg Woods<sup>1</sup>

*<sup>1</sup>Menzies Research Institute, University of Tasmania, Australia, <sup>2</sup>School of Medicine, University of Tasmania, Australia*

Wednesday, June 25: WAM4-Contributed Papers - E - 11:00AM - 1:00PM

New amphiphilic halogenated bacteriochlorins: spectroscopic, photophysical and photobiological studies.

Janusz Dabrowski\*<sup>1</sup>, Luis Arnaut<sup>3</sup>, Mariette Pereira<sup>3</sup>, Krystyna Urbanska<sup>2</sup>, Grazyna Stochel<sup>1</sup>

*<sup>1</sup>Faculty of Chemistry, Poland, <sup>2</sup>Biophysics Department, Poland, <sup>3</sup>Chemistry Department, Portugal*

Wednesday, June 25: WAM4-Contributed Papers - E - 11:00AM - 1:00PM

New insight and prediction of photostability of sunscreens

Bernd Herzog\*<sup>1</sup>, Myriam Sohn<sup>1</sup>, Uli Osterwalder<sup>2</sup>

<sup>1</sup>*Ciba Grenzach GmbH, Germany*, <sup>2</sup>*Ciba Inc., Switzerland*

Tuesday, June 24: TAM1-ASP/PPS-Pharmaceutical Photochemistry - A - 8:30AM - 10:30AM

New photosensitizers for antimicrobial photodynamic therapy.

Michael Hamblin<sup>1</sup>

<sup>1</sup>*Wellman Center for Photomedicine, Massachusetts General Hospital, United States*, <sup>2</sup>*Department of Dermatology, Harvard Medical School, United States*, <sup>3</sup>*Harvard-MIT Division of Health Sciences and Technology, United States*

Wednesday, June 25: WAM5-Photodynamic Therapy - 2 - 11:00AM - 1:00PM

Nicotinamide (vitamin B3) is protective against ultraviolet radiation-induced immunosuppression in humans

Diona Damian\*, Eleni Yiasemides, Geetha Sivapirabu, JooHong Park, Gary Halliday

*University of Sydney, Australia*

Wednesday, June 25: WAM1-Nutraceuticals in Photobiology - 8:30AM - 10:30AM

Non-denatured soy extracts reduce UVB-induced skin damage via multiple mechanisms

Nannan Chen<sup>1</sup>, Richard Scarpa<sup>2</sup>, Li Zhang<sup>1</sup>, Miri Seiberg\*<sup>1</sup>, Connie Lin<sup>1</sup>

<sup>1</sup>*Johnson & Johnson, United States*, <sup>2</sup>*Ernst & Young LLP, United States*

Tuesday, June 24: TPM3-Photocarcinogenesis - 4:00PM - 6:00PM

Novel secosteroidogenic pathway and the skin

Andrzej Slominski\*<sup>1</sup>, Robert Tuckey<sup>2</sup>, Jordan Zjawiony<sup>3</sup>

<sup>1</sup>*University of Tennessee Health Science Center, United States*, <sup>2</sup>*University of Western Australia, Australia*, <sup>3</sup>*University of Mississippi, United States*

Saturday, June 21: SAM3-Vitamin D/UVB - 11:00AM - 1:00PM

Optical experiments with singlet oxygen: From single cells to gold nanodiscs

Peter R. Ogilby

*University of Aarhus, Denmark*

Tuesday, June 24: TAM1-ASP/PPS-Pharmaceutical Photochemistry - A - 8:30AM - 10:30AM

Optical model for Barrett's esophagus

Jane Buchanan\*<sup>1</sup>, Linda Jones<sup>1</sup>, Norris Preyer, Jr.<sup>1</sup>, Herbert Wolfsen<sup>1</sup>, Michael Wallace<sup>1</sup>, Kanwar Gill<sup>1</sup>

<sup>1</sup>*College of Charleston, United States*, <sup>2</sup>*Mayo Clinic, United States*

Posters: Poster session

Organically Modified Silica (ORMOSIL) Nanoparticles as a drug delivery system for Photodynamic Therapy and tumor imaging

Chao Liu<sup>1</sup>, Anurag Gupta\*<sup>1</sup>, Mahabeer P. Dobhal<sup>1</sup>, Tymish Y. Ohulchanskyy<sup>2</sup>, Indrajit Roy<sup>2</sup>, Janet Morgan<sup>1</sup>, Earl J. Bergey<sup>2</sup>,

Paras N. Prasad<sup>2</sup>, Allan R. Oseroff<sup>1</sup>, Ravindra K. Pandey<sup>1</sup>

<sup>1</sup>*Roswell Park Cancer Institute, United States*, <sup>2</sup>*SUNY at Buffalo, United States*

Posters: Poster session

Oxidative stress inhibits the repair of oxidative DNA base modifications generated by solar light

Bernd Epe\*<sup>1</sup>, Wolfgang Eiberger<sup>1</sup>, Beate Volkmer<sup>2</sup>, Pablo Radicella<sup>3</sup>, Rachel Amouroux<sup>3</sup>, Claudine Dhérin<sup>3</sup>

<sup>1</sup>*University of Mainz, Inst. of Pharmacy, Germany*, <sup>2</sup>*Dermatologisches Zentrum, Germany*, <sup>3</sup>*CEA, Inst. de Radiobiologie Cellulaire et Moléculaire, France*

Monday, June 23: MPM1-ASP/ESP-Mechanisms of DNA Damage & Repair - 3:00PM - 5:00PM

Patient specific integrating sphere for improvement of dosimetry in PDT

Diana Glennie\*<sup>1</sup>, Thomas J. Farrell<sup>2</sup>, Michael S. Patterson<sup>2</sup>, Joseph E. Hayward<sup>2</sup>, Greg Sawesky<sup>2</sup>, Pam Woodworth<sup>2</sup>

<sup>1</sup>*McMaster University, Canada*, <sup>2</sup>*Juravinski Cancer Centre, Canada*

Monday, June 23: MAM4-Imaging Techniques and Probes - 11:00AM - 1:00PM

PDT-induced necrosis of neuronal and glial cells is controlled by cell signaling machinery.

Anatoly Uzdensky

*Institute of Neurocybernetics, Russian Federation*

Posters: Poster session

PET Imaging and PDT: Comparative tumor imaging and photosensitizing potential of Ring 'B' vs. Ring 'D' reduced chlorins with similar lipophilicity

Chao Liu\*<sup>1</sup>, Mahabeer P. Dobhal<sup>1</sup>, Janet Morgan<sup>1</sup>, Tymish Y. Ohulchanskyy<sup>2</sup>, Yihui Chen<sup>1</sup>, Ulas Sunar<sup>1</sup>, William Potter<sup>1</sup>, Joseph R. Missert<sup>1</sup>, Earl J. Bergey<sup>2</sup>, Paras N. Prasad<sup>2</sup>, Allan R. Oseroff<sup>1</sup>, Ravindra K. Pandey<sup>1</sup>

<sup>1</sup>*Roswell Park Cancer Institute, United States*, <sup>2</sup>*SUNY at Buffalo, United States*

Posters: Poster session

Photobiology and Photochemistry in industry: water disinfection and contamination treatment

Gordon Knight

*Trojan Technologies, Canada*

Monday, June 23: MAM4-Imaging Techniques and Probes - 11:00AM - 1:00PM

Photobiomodulation as a novel non-invasive therapy for the treatment of neurodegeneration and autoimmunity.

Jeri-Anne Lyons\*<sup>1</sup>, Kamaldeen Muilli<sup>1</sup>, Kristina DeSmet<sup>1</sup>, Huan Ling Liang<sup>2</sup>, Margaret Wong-Riley<sup>2</sup>, Harry Whelan<sup>2</sup>, Janis Eells<sup>1</sup>

<sup>1</sup>University of Wisconsin-Milwaukee, United States, <sup>2</sup>Medical College of Wisconsin, United States

Tuesday, June 24: TAM2-Low-Level Light Therapy - 8:30AM - 10:30AM

Photobiomodulation for retinal injury and retinal degenerative disease

Janis Eells\*<sup>1</sup>, Kristina DeSmet<sup>1</sup>, Michele Henry<sup>2</sup>, James VerHoeve<sup>3</sup>, Michael Nork<sup>3</sup>, Margaret Wong-Riley<sup>2</sup>, Harry Whelan<sup>2</sup>, Diana Kirk<sup>4</sup>, Jonathan Stone<sup>4</sup>, Krisztina Valter<sup>4</sup>

<sup>1</sup>University of Wisconsin-Milwaukee, United States, <sup>2</sup>Medical College of Wisconsin, United States, <sup>3</sup>University of Wisconsin-Madison, United States, <sup>4</sup>The Australian National University, Australia

Monday, June 23: MAM5-Ocular Photobiology - 11:00AM - 1:00PM

Photocarcinogenesis data demonstrate the validity of the SCUP-m actionsSpectrum for UVR-Induced skin cancer

Paul Donald Forbes\*, Douglas B. Learn, Christopher P. Sambuco, Marvin Arocena, Alan M. Hoberman  
Charles River Laboratories, Inc., United States

Tuesday, June 24: TPM3-Photocarcinogenesis - 4:00PM - 6:00PM

Photocarcinogenesis: What can we learn from the immune system?

Stephen Ullrich

UT MD andersonCancer Center, United States

Saturday, June 21: SPM2-Presidents Lectures - 4:00PM - 5:30PM

Photochemical cooperativity in photosystem II reaction center

Venkataramanaiah Viruvuru, Mario Fragata\*

University of Quebec, Canada

Posters: Poster session

Photodynamic therapy and the tumor microenvironment

Charles Gomer

University of Southern California, United States

Tuesday, June 24: TAM3-Photodynamic Therapy - 1 - 8:30AM - 10:30AM

Photodynamic Therapy-Induced activation and nuclear relocalization of epidermal growth factor receptor and STAT3 mediates survival of ovarian and lung cancer cells

Keith Cengel\*, Sarah Hagan, Mousumi Chadhury, Stephen Hahn

University of Pennsylvania, United States

Tuesday, June 24: TAM3-Photodynamic Therapy - 1 - 8:30AM - 10:30AM

Photoimmunomodulation in cosmetics

Priscila Menezes\*<sup>1</sup>, Carlos Praes<sup>2</sup>, Israel Feferman<sup>2</sup>, Vanderlei Bagnato<sup>1</sup>, Cladio Sibata<sup>1</sup>

<sup>1</sup>University of Sao Paulo, Brazil, <sup>2</sup>O Boticário, Brazil

Posters: Poster session

Photooxidative stress in melanocytes: from specific damage to specific responses

Laurent Marrot\*, Jean-Philippe Belaidi, Elodie Burty, Christophe Jones, Philippe Perez, Jérémie Soeur, Jean-Roch Meunier  
L'Oreal Research, France

Monday, June 23: MAM3-Contributed Papers -C - 8:30AM - 10:30AM

Photophereis in CTCL and systemic sclerosis

Robert Knobler

Medical University of Vienna, department of Dermatology, Austria

Sunday, June 22: SNAM2-Extracorporeal Photoimmunotherapy- Photophoresis - 8:30AM - 10:30AM

Photopheresis in solid organ transplantation

John Zic

Vanderbilt Univ School of Medicine, United States

Sunday, June 22: SNAM2-Extracorporeal Photoimmunotherapy- Photophoresis - 8:30AM - 10:30AM

Photophysical properties of Pheophorbide-a and Pheophorbide-a - Carboquone complex and its interactions with DNA Nucleosides and DNA oligonucleotides

Yisaira Diaz-Espinosa\*<sup>1</sup>, Rafael Arce<sup>1</sup>, Antonio E. Alegria<sup>2</sup>

<sup>1</sup>University of Puerto Rico Rio Piedras Campus, Puerto Rico, <sup>2</sup>University of Puerto Rico in Humacao, Puerto Rico

Posters: Poster session

Photophysics of the eye—Dosimetry for exposure of the retina and other ocular structures

David Sliney

Consulting Medical Physicist, United States

Monday, June 23: MAM5-Ocular Photobiology - 11:00AM - 1:00PM

Photoreversibility of fruiting in oriental melon (Cucumis Melo L.)

Seung Chang Hong\*<sup>1</sup>, Pyung Gyun Shin<sup>1</sup>, An Cheol Chang<sup>1</sup>, Ki Sang Lee<sup>1</sup>, Chul Won Lee<sup>1</sup>

<sup>1</sup>National Institute of Agricultural Science & Technology, RDA, Korea, Republic of, <sup>2</sup>Chungbuk National University, Korea, Republic of

Posters: Poster session

Phototoxic damage to human lens epithelial cells

Joan E. Roberts<sup>1</sup>, Albert Wielgus<sup>2</sup>, Usha Andley<sup>3</sup>, Colin F. Chignell<sup>2</sup>

<sup>1</sup>Natural Science, Fordham University, United States, <sup>2</sup>NIEHS, Laboratory of Pharmacology and Chemistry, United States,

<sup>3</sup>Ophthalmology and Visual Science, Washington University School of Medicine, United States

Monday, June 23: MAM5-Ocular Photobiology - 11:00AM - 1:00PM

Phototoxicity of pristine (C60) and hydroxylated [C60(OH)24] fullerene towards keratinocytes

Baozhong Zhao\*, Yu-Ying He, Piotr J. Bilski, Colin F. Chignell

National Institute of Environmental Health Sciences, United States

Posters: Poster session

Phototriggered liposomal release

Imene Chebbi<sup>1</sup>, Daniel Brault<sup>1</sup>, Marc Lecouvey<sup>2</sup>, Evelyne Migianu<sup>2</sup>, Olivier Seksek<sup>1</sup>

<sup>1</sup>Universite Pierre et Marie Curie, France, <sup>2</sup>Universite Paris Nord, France

Posters: Poster session

PIF5: Photoactivated protein degradation and negative regulation of PhyB Abundance in prolonged red light illumination

Yu Shen\*, Rajnish Khanna, Peter Quail

UC Berkeley, United States

Monday, June 23: MAM6-Photobiology in Asia - 1 - 11:00AM - 1:00PM

Platelet Activating Factor (PAF) induces mast cell migration from the skin to draining lymph nodes

Scott Byrne\*, Clare Beaugie

Dermatology Research Laboratories, Australia

Saturday, June 21: SAM4-Contributed Papers - A - 11:00AM - 1:00PM

Practical assessment of recommended UV exposures for vitamin D synthesis

Ann R. Webb\*, Richard Kift, Marie Durkin, Lucy Bunhill, Jacqueline Berry, Lesley E. Rhodes

University of Manchester, United Kingdom

Saturday, June 21: SAM3-Vitamin D/UVB - 11:00AM - 1:00PM

Prevention of genomic damage afforded by three sunscreen products having the same SPF: Beneficial effect of Mexoryl SX

Laurent Marrot<sup>1</sup>, Jean-Philippe Belaïdi<sup>1</sup>, Isabelle Hansenne<sup>2</sup>, Jean-Roch Meunier<sup>1</sup>

<sup>1</sup>L'Oreal, France, <sup>2</sup>L'Oreal, United States

Posters: Poster session

Primary photo processes in some Fluoroquinolone antibiotics

Suppiah Navaratnam<sup>1</sup>, Fernando Lorenzo<sup>2</sup>, Ruth Edge<sup>3</sup>, Norman Allen<sup>2</sup>

<sup>1</sup>University of Salford, United Kingdom, <sup>2</sup>Manchester Metropolitan University, United Kingdom, <sup>3</sup>University of Manchester, United Kingdom

Tuesday, June 24: TAM4-Pharmaceutical Photochemistry - B - 11:00AM - 1:00PM

Probiotics : A new approach in oral photoprotection

Patricia Manissier

Laboratoires innéov, France

Wednesday, June 25: WAM1-Nutraceuticals in Photobiology - 8:30AM - 10:30AM

Properties of photosystem ii (psii) in arabidopsis thaliana "lpa1" and chlamydomonas reinhardtii "rep27" mutants under photoinhibitory and recovery conditions

David Dewez<sup>1</sup>, Jose Gines Garcia-Cerdan<sup>2</sup>, Sungsoon Park<sup>1</sup>, Wolfgang P. Schroeder<sup>2</sup>, Anastasios Melis<sup>1</sup>

<sup>1</sup>University of California - Berkeley, United States, <sup>2</sup>Institute of Chemistry, Umea University, Sweden

Posters: Poster session

Properties of UVA or UVB irradiated quercetin, a potential topical photoprotectant

Brian Fahlman\*, Ed Krol

University of Saskatchewan, Canada

Posters: Poster session

Protein- and peptide-membrane interactions investigated with UV resonance Raman spectroscopy

Judy Kim\*, Hannah Shafaat, Katheryn Sanchez, Diana Schlamadinger, Tiffany Neary

University of California at San Diego, United States

Monday, June 23: MPM2-Raman Spectroscopy and Photobiology - 3:00PM - 5:00PM

Proteomic response of the Sea Urchin Strongylocentrotus purpuratus early cleavage embryo to ultraviolet radiation

Joseph Campanale\*, Lars Tomanek, Nikki Adams

California Polytechnic State University, United States

Posters: Poster session

Quantification of reactive oxygen species damage to Mitochondrial DNA after radiation and H<sub>2</sub>O<sub>2</sub>

Helene Hill

*NJ Medical School, United States*

Wednesday, June 25: WAM2-ASP/RRS-Mitochondrial ROS - 8:30AM - 10:30AM

Quantification of total and deleted mitochondrial DNA copies in Chinese hamster fibroblasts expressing mutations in the nuclear genes coding for succinate dehydrogenase (SDH).

Helene Hill<sup>1</sup>, Douglas Spitz<sup>2</sup>, James Dermody<sup>1</sup>, Robert Donnelly<sup>1</sup>, Disha Dayal<sup>2</sup>, Kjerstin Owens<sup>2</sup>

<sup>1</sup>*NJ Medical School, United States*, <sup>2</sup>*University of IA, United States*

Monday, June 23: MAM3-Contributed Papers -C - 8:30AM - 10:30AM

Quantitative assessment of genotoxicity induced by simulated solar UV on a reconstructed skin model EPISKIN

Laurent Marrot<sup>\*1</sup>, Emilie Planel<sup>1</sup>, Nathalie Boyera<sup>2</sup>, Jean-Philippe Belaïdi<sup>1</sup>, Christophe Jones<sup>1</sup>, Perez Philippe<sup>1</sup>, Jean-Roch Meunier<sup>1</sup>

<sup>1</sup>*L'Oreal research, France*, <sup>2</sup>*EPISKIN Laboratories, France*

Posters: Poster session

REP27, a tetratricopeptide repeat nuclear-encoded and chloroplast-localized protein functions in the D1/32 kD reaction center protein turnover and photosystem-II repair from photodamage.

Sungsoon Park\*, David Dewez, Anastasios Melis

*University of California Berkeley, United States*

Tuesday, June 24: TAM6-Contributed Papers - D - 11:00AM - 1:00PM

Resonance Raman studies of mitoNEET: pH and pioglitazone binding effects

Timothy Tirrell\*, Mark Paddock, Andrea Conlan, Patricia Jennings, Judy Kim

*University of California, San Diego, United States*

Sunday, June 22: SNAM3-Contributed Papers - B - 8:30AM - 10:30AM

Review of the Vitamin D endocrine system: From ultraviolet light and 7-dehydrocholesterol, thru key metabolism, to production of a steroid hormone with a complex receptor system and a multitude of biological responses

Anthony Norman

*University of California, United States*

Saturday, June 21: SAM3-Vitamin D/UVB - 11:00AM - 1:00PM

Role of retinoids in visual photoreceptor function and survival

Rosalie Crouch

*Medical University of South Carolina, United States*

Sunday, June 22: SNAM4-Award Lectures - 11:00AM - 1:00PM

Roles of different functional moieties of phototropins

Akira Nagatani\*, Akihiko Onodera, Sam-Geun Kong, Yusuke Aihara, Toshiaki Kozuka, Tomomi Suzuki

*Kyoto University, Japan*

Monday, June 23: MPM3-Photobiology in Asia - 2 - 3:00PM- 5:00PM

RopGEF11, novel phytochrome interacting protein, is involved in light signaling in Arabidopsis

Dong Ho Shin<sup>1</sup>, Bong-Kwan Phee<sup>1</sup>, Tae-Lim Kim<sup>1</sup>, Jihye Yoo<sup>1</sup>, Jeong-Il Kim<sup>2</sup>, Kyoung-Jin Park<sup>2</sup>, Pill-Soon Song<sup>3</sup>, Yong-Kook Kwon<sup>1</sup>, Man-Ho Cho<sup>1</sup>, Jong-Seong Jeon<sup>1</sup>, Seong Hee Bhoo<sup>\*1</sup>, Tae-Ryong Hahn<sup>1</sup>

<sup>1</sup>*Kyung Hee University, Korea, Republic of*, <sup>2</sup>*Chonnam National University, Korea, Republic of*, <sup>3</sup>*Cheju National University, Korea, Republic of*

Monday, June 23: MAM6-Photobiology in Asia - 1 - 11:00AM - 1:00PM

Safety assessments of endoscopic light exposures of internal tissues

David Sliney

*Consulting Medical Physicist, United States*

Tuesday, June 24: TAM4-Pharmaceutical Photochemistry - B - 11:00AM - 1:00PM

SERS-based sensors and assays

Sebastian Wachsmann-Hogiu\*, Cynthia Pagba, Stephen Lane

*University of California Davis, United States*

Monday, June 23: MAM4-Imaging Techniques and Probes - 11:00AM - 1:00PM

Signaling control of apoptosis in photosensitized glial cells

Uzdensky Anatoly

*Institute of Neurocybernetics, Russian Federation*

Posters: Poster session

Signaling events in nitric oxide-induced cell resistance to photodynamic eradication

Reshma Bhowmick, Albert Girotti\*

*Medical College of Wisconsin, United States*

Posters: Poster session

Singlet Oxygen: A critical ROS in Photodynamic Therapy

Brian Wilson

*Ontario Cancer Institute, Canada*

Wednesday, June 25: WAM2-ASP/RRS-Mitochondrial ROS - 8:30AM - 10:30AM

Solar radiations and the induction of DNA damages, Mutations and Skin cancers, especially Malignant Melanomas

Richard Setlow

*Brookhaven National Laboratory, United States*

Saturday, June 21: SAM1-Photobiology Perspectives Lecture - 10:30AM - 11:00AM

Stand-Off detection of vapor-phase materials using back-scattered Coherent spectroscopy

Bradley Arnold

*UMBC, United States*

Tuesday, June 24: TPM2-Environmental Photobiology - 4:00PM - 6:00PM

Structure and binding analyses of Arabidopsis thaliana cryptochrome 3 in complex with CPD-comprising probes

Richard Pokorny<sup>1</sup>, Tobias Klar<sup>2</sup>, Lars-Oliver Essen<sup>2</sup>, Alfred Batschauer<sup>1</sup>

<sup>1</sup>Philipps University, Department of Biology, Germany, <sup>2</sup>Philipps University, Department of Chemistry, Germany

Monday, June 23: MAM2-Blue Light Photoreceptors - 8:30AM - 10:30AM

Study of interaction of Hypericin in U-87MG cell line using synchrotron based Fourier transform infrared microspectroscopy

Luboslava Buriankova<sup>2</sup>, Matthieu Refregiers<sup>1</sup>, Sirinart Srichan<sup>1</sup>, Veronika Huntosova<sup>2</sup>, Paul Dumas<sup>1</sup>, Pavol Miskovsky<sup>2</sup>

<sup>1</sup>Synchrotron SOLEIL, France, <sup>2</sup>University P.J.Safarik, Slovakia

Posters: Poster session

Sub-erythral UV radiation effects on human skin

Anny Fourtanier

*L'Oréal Recherche, France*

Wednesday, June 25: WPM1-Photoimmunology and Photocarcinogenesis-M.Kripke Celebration - 3:00PM - 5:00PM

Surface elastic properties and Age-Dependent photoionization thresholds of human RPE melanosomes and lipofuscin

John Simon

*Duke University, United States*

Monday, June 23: MAM5-Ocular Photobiology - 11:00AM - 1:00PM

Synergies of VEGF Inhibition and Photodynamic Therapy in the treatment of age-related macular degeneration

Maria-Fernanda Zuluaga<sup>1</sup>, Meihua Ju<sup>2</sup>, Carolina Mailhos<sup>2</sup>, Gregory Robinson<sup>2</sup>, David T. Shima<sup>2</sup>, Robert Gurny<sup>1</sup>, Norbert Lange<sup>1</sup>

<sup>1</sup>University of Geneva, Switzerland, <sup>2</sup>Eyeteck Research Center, United States

Monday, June 23: MAM3-Contributed Papers -C - 8:30AM - 10:30AM

Synthesis and photophysical properties of functional macromolecules from short Single Walled Carbon Nanotubes (sSWNT), (4,4'-diphenylvinyl)-sSWNT and (alkyl-azaxanthone)-sSWNT.

Roberto Martin<sup>1</sup>, Liliana Jimenez<sup>1</sup>, Juan C. Scaiano<sup>1</sup>, Hermenegildo Garcia<sup>1</sup>

<sup>1</sup>University of Ottawa, Canada, <sup>2</sup>Instituto de Tecnologia Quimica CSIC/UPV, Spain

Posters: Poster session

TGF-beta1 transgenic mice: a suitable model for the therapeutic action of PUVA in psoriasis

Tej Pratap Singh<sup>1</sup>, Michael P. Schön<sup>2</sup>, Kai Michaelis<sup>3</sup>, Xiao-Jing Wang<sup>4</sup>, Helmut Kerl<sup>1</sup>, Peter Wolf<sup>1</sup>

<sup>1</sup>Department of Dermatology, Medical University of Graz, Austria, <sup>2</sup>Department of Dermatology, University Medical Center

Göttingen, Germany, <sup>3</sup>Rudolf Virchow Center for Experimental Biomedicine and Department of Dermatology, University of

Würzburg, Germany, <sup>4</sup>Departments of Otolaryngology, Dermatology, Cell and Developmental Biology, Oregon Health &

Science University, United States

Wednesday, June 25: WPM1-Photoimmunology and Photocarcinogenesis-M.Kripke Celebration - 3:00PM - 5:00PM

The cone photoreceptors for color vision depend on presence of the transport protein IRBP for normal function

Ryan Parker, Rosalie Crouch\*

*Medical University of South Carolina, United States*

Monday, June 23: MAM5-Ocular Photobiology - 11:00AM - 1:00PM

The control of skin carcinogenesis in mice via metabolic regulation of cyclic guanosine monophosphate

Munif Allanson, Sondur J. Arun, Vivienne E. Reeve\*

*Faculty of Veterinary Science, University of Sydney, Australia*

Tuesday, June 24: TPM3-Photocarcinogenesis - 4:00PM - 6:00PM

The effects of melanin on the amount and distribution of DNA damage induced by UVA and UVB radiation.

David Mitchell<sup>1</sup>, Lakshmi Paniker<sup>1</sup>, Vishnukama Golla<sup>1</sup>, Douki Thierry<sup>2</sup>

<sup>1</sup>The University of Texas MD Anderson Cancer Center, United States, <sup>2</sup>Lab Lésions des Acides Nucléiques, CEA, France

Monday, June 23: MPM1-ASP/ESP-Mechanisms of DNA Damage & Repair - 3:00PM - 5:00PM

The effects of UVB light on serum 25-hydroxyvitamin D levels in humans with 3% dihydroxyacetone treatment of skin

Laura Armas<sup>1</sup>, Ramon Fusaro<sup>1</sup>, Christopher Huerter<sup>1</sup>, Robert Sayre<sup>2</sup>, Robert Heaney<sup>1</sup>

<sup>1</sup>Creighton University, United States, <sup>2</sup>University Tennessee, United States  
Saturday, June 21: SAM3-Vitamin D/UVB - 11:00AM - 1:00PM

The excited states of fluorescent adenine analogs: An Ab Initio and stark spectroscopic study of 2-Aminopurine and 8-Vinyladenine.

Goutham Kodali\*, Kurt Kistler, Spiridoula Matsika, Robert Stanley  
Temple University, United States  
Posters: Poster session

The ideal sunscreen protects against sunburn, skin photo aging and skin cancer but still allows the synthesis of Vitamin D3 in the skin - an in vitro and in silico assessment of past, current and future sunscreens.

Uli Osterwalder\*, Bernd Herzog  
Ciba Inc., Switzerland

Sunday, June 22: SNAM3-Contributed Papers - B - 8:30AM - 10:30AM

The immunosuppressant Rapamycin alters the p53 mutation spectrum in UV-induced skin tumors and inhibits tumor outgrowth.

Pieter Voskamp<sup>1</sup>, Gudrun Koehl<sup>2</sup>, Heggert Rebel<sup>1</sup>, Jan-Nico Bouwes Bavinck<sup>1</sup>, Hans Schlitt<sup>2</sup>, Frank de Gruijl\*<sup>1</sup>, Edward Geissler<sup>2</sup>

<sup>1</sup>Leiden Univ. Med. Ctr., Netherlands, <sup>2</sup>Univ. of Regensburg, Germany  
Tuesday, June 24: TPM3-Photocarcinogenesis - 4:00PM - 6:00PM

The performance of a sunscreen depends on the UVR spectrum with which it is tested

Antony Young  
King's College School of Medicine (Guy's Campus), United Kingdom  
Tuesday, June 24: TAM6-Contributed Papers - D - 11:00AM - 1:00PM

The Photosensitizing potential of compact fluorescent vs. incandescent light bulbs

Colin Chignell\*, Robert Sik, Piotr Bilski  
Laboratory of Pharmacology, NIEHS/NIH, United States  
Posters: Poster session

The role of naturally occurring sensitizers in the formation of free radicals in the photolysis of Xenobiotics

Bernadette Marquez, Peter de Lijser\*  
California State University, Fullerton, United States  
Posters: Poster session

The role of tumor-antigens and T regulatory cells in PDT-induced anti-tumor immunity.

Pawel Mroz\*, Michael Hamblin  
Wellman Center for Photomedicine. MAss. General Hospital, Harvard Medical School, United States  
Wednesday, June 25: WAM5-Photodynamic Therapy - 2 - 11:00AM - 1:00PM

The structure of a complete phytochrome sensory module in the Pr ground state

Jon Hughes\*<sup>1</sup>, Jo Maillet<sup>1</sup>, Essen Lars-Oliver<sup>1</sup>  
<sup>1</sup>Plant Physiology, Justus Liebig University, Germany, <sup>2</sup>Structural biochemistry, Phillips University, Germany  
Saturday, June 21: SAM2-Bacterial Phyochromes - 11:00AM - 1:00PM

Time-resolved detection of conformation changes of photosensor proteins

Masahide Terazima  
Kyoto University, Japan  
Monday, June 23: MPM3-Photobiology in Asia - 2 - 3:00PM- 5:00PM

Topical delivery of silicon phthalocyanine photosensitizer Pc 4 for photodynamic therapy of skin pathologies

Minh Lam\*<sup>1</sup>, Diana SantoDomingo<sup>1</sup>, Yun Liu<sup>1</sup>, Andrew Hsia<sup>1</sup>, Denise Hatala<sup>1</sup>, Malcolm Kenney<sup>1</sup>, Nancy Oleinick<sup>1</sup>, Kevin Cooper<sup>1</sup>, Elma Baron<sup>1</sup>

<sup>1</sup>Case Western Reserve University, United States, <sup>2</sup>Cleveland Veteran Affairs Medical Center, United States  
Monday, June 23: MAM1-Contributed Paper - F - 8:30AM - 10:30AM

Topical Vitamin D increases the ability of regulatory T Cells to suppress asthma-like responses in a mouse model of allergic airways Disease

Shelley Gorman\*, Melinda Judge, Prue Hart  
Telethon Institute for Child Health Research, Australia  
Sunday, June 22: SNAM3-Contributed Papers - B - 8:30AM - 10:30AM

Towards in vivo PDT dosimetry using fluorescence lifetime imaging

Qiyin Fang\*<sup>1</sup>, Jennifer Russell<sup>1</sup>, Kevin Diamond<sup>2</sup>, Joseph Hayward<sup>2</sup>, Tom Farrell<sup>2</sup>, Michael Patterson<sup>2</sup>, Tony Collins<sup>1</sup>  
<sup>1</sup>McMaster University, Canada, <sup>2</sup>Juravinski Cancer Centre, Canada  
Monday, June 23: MAM4-Imaging Techniques and Probes - 11:00AM - 1:00PM

Transgenic mice with a knock in point mutation at p53 codon 172 exhibit increased sensitivity to UV-induced skin damage, immunosuppression, and skin cancer.

Cara Benjamin\*, Chengming Zhu, Alberto Limón-Flores, David Mitchell, Stephen Ullrich, Honnavara Anathaswamy

*University of Texas MD Anderson Cancer Center, United States*

Tuesday, June 24: TPM3-Photocarcinogenesis - 4:00PM - 6:00PM

Treatment of tumors using PDT or chemoablation using PV-10 produces antitumor immunity effective on remote tumors

Craig Dees\*, T.C. Scott, E.A. Wachter

*Provectus Pharmaceuticals, Inc., United States*

Monday, June 23: MAM1-Contributed Paper - F - 8:30AM - 10:30AM

Tubulin polymerization with porphyrins

Rolando Valdez\*, Eric Johnson, Lorenzo Brancalone

*University of Texas at San Antonio, United States*

Posters: Poster session

Tumor microenvironment as an effector of PDT response

Theresa Busch\*, E. Paul Wileyto, Arjun Yodh, Guoqiang Yu, Xiaoman Xing, Shirron Carter, Elizabeth Rickter, Min Yuan, Kevin Jenkins

*University of Pennsylvania, United States*

Tuesday, June 24: TAM3-Photodynamic Therapy - 1 - 8:30AM - 10:30AM

Ultrafast dynamics and anionic active states of the flavin cofactor in cryptochrome and photolyase

Dongping Zhong

*The Ohio State University, United States*

Monday, June 23: MAM3-Contributed Papers - C - 8:30AM - 10:30AM

Ultrafast excited state isomerization in phytochrome revealed by femtosecond stimulated Raman spectroscopy

Jyotishman Dasgupta<sup>1</sup>, Renee Frontiera<sup>1</sup>, Keenan Taylor<sup>2</sup>, J. Clark Lagarias<sup>2</sup>, Richard Mathies<sup>1</sup>

<sup>1</sup>*University of California, United States*, <sup>2</sup>*University of California, United States*

Saturday, June 21: SAM4-Contributed Papers - A - 11:00AM - 1:00PM

Ultrafast excited-state structural dynamics of GFP observed by femtosecond stimulated Raman spectroscopy

Chong Fang\*, Rosalie Tran, Renee Frontiera, Richard A. Mathies

*Department of Chemistry, University of California, United States*

Wednesday, June 25: WAM4-Contributed Papers - E - 11:00AM - 1:00PM

Ultrafast structural dynamics in BLUF domains: transient infrared spectroscopy of AppA and its mutants.

Allison Stelling\*, K. Ronayne, J. Nappa, P. Tonge, S. Meech

*Stony Brook University, United States*

Wednesday, June 25: WAM4-Contributed Papers - E - 11:00AM - 1:00PM

Ultraviolet-A radiation induces changes in cyclin G gene expression in mouse melanoma cells

Riikka Pastila\*, Dariusz Leszczynski

*STUK- Radiation and Nuclear Safety Authority, Finland*

Saturday, June 21: SAM4-Contributed Papers - A - 11:00AM - 1:00PM

Using principal component analysis to determine Photofrin content from reflectance spectra

Daryl Reynolds\*<sup>1</sup>, Norris Preyer<sup>1</sup>, Linda Jones<sup>1</sup>, Jane Buchanan<sup>1</sup>, Marquitta Scott<sup>1</sup>, Herbert Wolfson<sup>2</sup>, Kanwar Gill<sup>2</sup>, Michael Wallace<sup>2</sup>

<sup>1</sup>*College of Charleston, United States*, <sup>2</sup>*Mayo Clinic, United States*

Posters: Poster session

UV photodimer processing in mammalian cells

Leon Mullenders

*LUMC, Toxicogenetics, Netherlands*

Monday, June 23: MPM1-ASP/ESP-Mechanisms of DNA Damage & Repair - 3:00PM - 5:00PM

UV protective effects of flavonoids: From the human skin cell model to a human trial

Rex Tyrrell\*<sup>1</sup>, Sharmila Basu-Modak<sup>1</sup>, Catherine Rice-Evans<sup>1</sup>, Jean Krutmann<sup>1</sup>, Len Roza<sup>1</sup>

<sup>1</sup>*University of Bath, United Kingdom*, <sup>2</sup>*University of Delhi, India*, <sup>3</sup>*King's College London, United Kingdom*, <sup>4</sup>*Heinrich-Heine-Universität, Germany*, <sup>5</sup>*TNO Nutrition and Food Research, Netherlands*

Wednesday, June 25: WAM1-Nutriceuticals in Photobiology - 8:30AM - 10:30AM

UV Radiation induces mutations in the PTEN gene in melanomas from xeroderma pigmentosum patients

YUN WANG\*, John DiGiovanna, Jere Stern, Thomas Hornyak, Mark Raffeld, Sikandar Khan, Kyu Seon Oh, Kenneth Kraemer

*NIH/NCI, United States*

Posters: Poster session

UVB, UVA and interactive effects are immunosuppressive in humans

Gary Halliday\*, Yasmin Renwick, Diona Damian

*University of Sydney, Australia*

Wednesday, June 25: WPM1-Photoimmunology and Photocarcinogenesis-M.Kripke Celebration - 3:00PM - 5:00PM

UV-induced histone H2AX phosphorylation and recruitment of double strand break related proteins in XP-B cells

Kyu-Seon Oh\*<sup>1</sup>, Michael Bustin<sup>2</sup>, Kenneth Kreamer<sup>1</sup>

<sup>1</sup>*DNA repair Section, CCR, National Cancer Institute, United States*, <sup>2</sup>*Laboratory of Metabolism, CCR, National Cancer*



*Institute, United States*

Monday, June 23: MAM3-Contributed Papers -C - 8:30AM - 10:30AM

Validation of bio-behavioral measurement methods of sun exposure for skin cancer prevention research in Southern Arizona high school students

Naja McKenzie\*<sup>1</sup>, Elisabeth Thieden<sup>2</sup>, Jakob Heidenreich<sup>2</sup>

<sup>1</sup>Arizona Cancer Center, United States, <sup>2</sup>Bispebjerg Hospital University of Copenhagen, Denmark

Sunday, June 22: SNAM3-Contributed Papers - B - 8:30AM - 10:30AM