

**Basic Science: The Cutting Edge in Optical Diagnostics and
Therapeutics of Tissues and Cells - Lecture Hall 207**

1:30 pm - 6:00 pm

Directors: *Serge R. Mordon, Ph.D., J. Stuart Nelson, M.D., Ph.D.*

Disclosures

Serge R. Mordon, Ph.D. received travel expenses and salary from INSERM; stockholder with Ekkyo; research grant from Osyris, Photocure, Quantel Derma, and Steba; intellectual property rights with INSERM and Lille University Hospital

J. Stuart Nelson, M.D., Ph.D. received equipment from Candela, Cynosure, Fotona, Lumenis, and New Star; research grant from Candela, Genentech, and Wyeth; royalties and intellectual property rights with Candela and New Star; honoraria from Candela

Educational Needs

These sessions are directed towards promoting a better understanding of various light-based diagnostic and therapeutic techniques, and interaction of light with tissues and cells.

Participants

Scientists, engineers, medical practitioners as well as other health care professionals involved in biomedical applications of lasers are invited to attend.

Background Requirements

Participants should have a basic understanding or experience of how light interacts with tissues.

Instructional Content and/or Expected Learning Outcomes

These sessions will provide attendees knowledge of important advances at the forefront in optical diagnostics and therapeutics and their potential applications in the clinical management of patients. Novel results are presented that will impact the development of new and more efficacious, light-based therapies and diagnostics. Characterization of light sources and safety issues are also considered.

Hot Topics

- New Imaging Techniques
- Vascular Applications
- Photodynamic Therapy
- Nanoparticles
- Laser Safety

VASCULAR

Moderator: *John A. Viator, Ph.D.*

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| 1:30 pm - 1:39 pm
(ePoster Available) | 1 | <p>OPTIMIZED IPL PHOTOCOAGULATION BY METHAEMOGLOBIN GENERATION FROM WHOLE BLOOD</p> <p><i>Caerwyn Ash¹, Peter Bjerring, Sean Lanigan, Marc Clement², Godfrey Town², School of Medicine, Swansea University, Swansea, United Kingdom, Molholm Hospital, Vejle, Denmark, Sk:n Clinics, Birmingham, United Kingdom</i></p> <p>¹Equipment and salary from CyDen, Ltd.; travel expenses from Swansea University
²Consulting fees from CyDen, Ltd.</p> |
| 1:40 pm - 1:49 pm | 2 | <p>MULTIMODAL WIDE-FIELD FUNCTIONAL IMAGING OF THE MICROVASCULAR RESPONSE TO SELECTIVE LASER INJURY</p> <p><i>Albert Bui→, Bernard Choi, Kathleen Teves, Philadelphia, PA, Beckman Laser Institute and Medical Clinic, University of California, Irvine, CA</i></p> |

→Recipient of ASLMS travel grant.

Basic Science Session

Friday, April 16, 2010

2010 Annual Conference
Pre-Conference Courses: April 14-15, 2010
Annual Conference: April 16-18, 2010
Phoenix Convention Center, Phoenix, AZ

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| 1:50 pm - 1:59 pm | 3 | <p>SAFE AND EFFECTIVE TOPICAL ANTIANGIOGENIC THERAPY FOR INHIBITING REPERFUSION OF PHOTOCOAGULATED BLOOD VESSELS IN AN ANIMAL MODEL</p> <p><i>Wangcun Jia¹, Victor Sun, Bernard Choi, Thuy Phung, Tom Liu², Martin C. Mihm, Jr., J. Stuart Nelson³</i>, Beckman Laser Institute and Medical Clinic, University of California, Irvine, CA, Baylor College of Medicine, Houston, TX, Conrex Pharmaceuticals, Newtown Square, PA, Massachusetts General Hospital, Boston, MA</p> <p>¹Research grant from Candela
²Salary from Conrex Pharmaceuticals
³Equipment from Fotona; research grant from Candela</p> |
| 2:00 pm - 2:09 pm | 4 | <p>NUMERICAL OPTIMIZATION OF SEQUENTIAL CRYOGEN COOLING AND LASER IRRADIATION FOR IMPROVED THERAPY OF PORT WINE STAIN</p> <p><i>Matija Milanic[*], Wangcun Jia, J. Stuart Nelson, Boris Majaron, Josef Stefan Institute, Ljubljana, Slovenia, Beckman Laser Institute and Medical Clinic, University of California, Irvine, CA</i></p> <p style="text-align: center;"><u>SAFETY</u></p> |
| 2:10 pm - 2:19 pm | 5 | <p>PATIENT SAFETY AND LASER LEGISLATION: AN INTERNATIONAL EXPERIENCE</p> <p><i>Merete Hædersdal</i>, Bispebjerg Hospital, University of Copenhagen, Copenhagen, Denmark</p> |
| 2:20 pm - 2:29 pm | 6 | <p>DESIGN-LEVEL APPROACHES TO SAFETY FEATURES OF HOME-USE LASER BASED DEVICES</p> <p><i>David Sliney¹, Michail Smirnov², Stewart Wilson², Oldrich Laznicka, Oksana Bradley², Stephanie Jacked², Guangming Wang², Gregory Altshuler², Henry Zenzie, Ilya Yaroslavsky²</i>, Consulting Medical Physicist, Fallston, MD, Palomar, Burlington, MA</p> <p>¹Consulting fees and travel expenses from Palomar
²Salary from Palomar</p> |
| 2:30 pm - 2:39 pm
<i>(ePoster Available)</i> | 7 | <p>OPTIMUM PULSE STRUCTURE FOR EFFECTIVE HAIR REMOVAL USING BROADBAND PULSED LIGHT SYSTEMS</p> <p><i>Caerwynn Ash¹, Kelvin Donne, Gwenaelle Daniel, Godfrey Town², Marc Clement³</i>, School of Medicine, Swansea University, Swansea Metropolitan University, Swansea, United Kingdom, Independent Laser Protection Adviser, Haywards Heath, United Kingdom</p> <p>¹Salary and equity position with CyDen, Ltd.
²Consulting fees and travel expense from CyDen, Ltd.
³Consulting fees and equity position with CyDen, Ltd.</p> |
| 2:40 pm - 3:44 pm | | BREAK - VISIT THE EXHIBITS AND VIEW ePOSTERS |

^{*}Recipient of U.S. Air Force Office of Scientific Research travel grant.

NANOPARTICLES

Moderator: *Guillermo Aguilar, Ph.D.*

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| 3:45 pm - 3:54 pm | 8 | <p>EFFECT OF COATING MATERIAL ON UPTAKE OF ICG-LOADED NANOCAPSULES BY NORMAL AND CANCEROUS CELLS <i>IN VITRO</i></p> <p><i>Bongsu Jung*</i>, <i>Eulises Lomeli</i>, <i>Sharad Gupta</i>, <i>Bahman Anvari</i>, University of California, Riverside, CA</p> |
| 3:55 pm - 4:04 pm
(ePoster Available) | 9 | <p>NANOPARTICLE-MEDIATED PHOTOTHERMAL THERAPY OF TUMORS: A COMPARATIVE STUDY OF PHOTOTHERMAL EFFICIENCY FOR DIFFERENT PARTICLE TYPES</p> <p><i>Varun P. Pattani**</i>, <i>Matt Campbell</i>, <i>James W. Tunnell</i>, University of Texas at Austin, Austin, TX</p> <p>• Content discusses non-FDA approved device or off-label use</p> |
| 4:05 pm - 4:14 pm
(ePoster Available) | 10 | <p>NOVEL APPLICATION OF RARE-EARTH PARTICLES IN ACTIVATING PHOTODYNAMIC AGENTS THROUGH X-RAY INDUCED VISIBLE FLUORESCENCE: AN <i>IN VITRO</i> STUDY</p> <p><i>Erkinay Abliz*</i>, <i>Darrell Tata</i>, <i>Ronald Waynant</i>, <i>Joshua Collins</i>, <i>Joseph Friedberg</i>, <i>Ajith Kumar</i>, <i>Howard Bell</i>, George Washington University, Washington, DC, U.S. Food and Drug Administration, Silver Spring, MD, University of Pennsylvania, Philadelphia, PA, Sunstone Bioscience, Inc., Philadelphia, PA</p> <p>• Content discusses non-FDA approved device or off-label use</p> |
| 4:15 pm - 4:24 pm | 11 | <p>LASER INJECTION OF MOLECULES AND PARTICLES</p> <p><i>Gregory Altshuler</i>, <i>Ilya Yaroslavsky</i>, <i>David Tabatadze</i>, <i>Andrey Belikov</i>, <i>Christine Dierickx</i>, <i>Elina Genina</i>, <i>Leonid Dolotov</i>, <i>Alexey Bashkatov</i>, <i>Valery Tuchin</i>, Palomar, Burlington, MA, SPITMO University, St. Petersburg, Saratov State University, Russian Federation, Skin and Laser Center, Boom, Belgium</p> |

2007 RESEARCH GRANT RECIPIENT

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| 4:25 pm - 4:34 pm | 12 | <p>PHOTOACOUSTIC DETECTION OF NANOPARTICLE TAGGED BREAST CANCER CELLS IN A MOUSE MODEL</p> <p><i>John Viator</i>, <i>Sagar Gupta</i>, <i>Kiran Bhattacharyya</i>, <i>Brooke Bell</i>, University of Missouri, Columbia, MO</p> |
| 4:35 pm - 4:44 pm | 13 | <p>THIN TISSUE POLARIMETRY TO EXAMINE THE COMBINED EFFECTS OF BIREFRINGENCE AND SCATTERING</p> <p><i>Amy Winkler</i>, <i>Maria Rosaria Antonelli</i>, <i>Steven Jacques</i>, <i>Jennifer Barton</i>, University of Arizona, Tucson, AZ, Ecole Polytechnique, Palaiseau, France, Oregon Health and Science University, Portland, OR</p> |
| 4:45 pm - 4:54 pm | 14 | <p>LIGHT ACTIVATED MICRO-PATTERNED DRUG DELIVERY DEVICE IN <i>IN VIVO</i> RABBIT EYE - FABRICATION, BIOCOMPATIBILITY, AND RELEASE MEASUREMENT</p> <p><i>Raiyan Zaman*</i>, <i>Ashwini Gopal</i>, <i>Xiaojing Zhang</i>, <i>Ashley Welch</i>, <i>Henry Rylander</i>, University of Texas at Austin, Austin, TX</p> |

*Best Student/Resident Basic Science Award Recipient

♦Recipient of U.S. Air Force Office of Scientific Research travel grant.

4:55 pm - 5:04 pm 15 TARGETED DELIVERY OF GOLD-COATED PLASMON RESONANT LIPOSOMES TO
CANCER CELLS
(ePoster Available)
Xenia Kachur, Sarah Leung, Samantha Behunin, Michael Bobnick, Marek Romanowski, University of Arizona, Tucson, AZ

5:05 pm - 5:14 pm 20 EFFECT OF COATING MATERIAL ON UPDATE OF ICG LOADED NANOCAPSULES
BY PHAGOCYtic CELLS
Baharak Bahmani[♦], Bongsu Jung, Sharad Gupta, Bahman Anvari, University of California, Riverside, CA

PHOTODYNAMIC THERAPY

5:15 pm - 5:24 pm 16 PHOTODYNAMIC INACTIVATION OF BACTERIA USING POLYETHYLENIMINE -
CHLORIN E6 CONJUGATES: EFFECT OF POLYMER MOLECULAR WEIGHT,
SUBSTITUTION RATIO OF CHLORIN E6 AND PH
(ePoster Available)
Liyi Huang[♦], Zhiyentayev Timur, Azhibek Dulat, Xuan Yi, Michael Hamblin, Wellman Center for Photomedicine, Massachusetts General Hospital, Boston, MA

•Content discusses non-FDA approved device or off-label use

5:25 pm - 5:34 pm 17 THE EFFECT OF METHYLENE BLUE PHOTODYNAMIC THERAPY ON HUMAN
MELANOCYTE VIABILITY
Chao Li[→], Jie Zhao, R. Rox Anderson, Jennifer Lin, Wellman Center for Photomedicine, Boston, MA

5:35 pm - 5:44 pm 18 PHOTODYNAMIC DIAGNOSIS UTILIZING METHYL AMINOLEVULINATE PRIOR
TO MOHS MICROGRAPHIC SURGERY
(ePoster Available)
Emily Tierney¹, C. William Hanke¹, Boston University, Boston, MA, Laser and Skin Surgery Center of Indiana, Carmel, IN

¹Equipment from Galderma

•Content discusses non-FDA approved device or off-label use

5:45 pm - 5:53 pm 19 A COMPARATIVE STUDY BETWEEN 5-AMINOLEVULINIC ACID AND METHYL
AMINOLEVULINATE PHOTODYNAMIC THERAPY: ASSESSMENT OF
FLUORESCENCE, PAIN AND EFFICACY

Ronan Valentine, Sally Ibbotson, Tom Brown, Kenny Wood, Harry Moseley, University of St. Andrews/Ninewells Hospital & Medical School, St. Andrews/Dundee, United Kingdom

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[♦]Recipient of U.S. Air Force Office of Scientific Research travel grant.

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