

Diagnosis and Treatment of Diseases in the Breast and Reproductive System III

Saturday - Sunday 28 - 29 January 2017

Conference Sessions At A Glance

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1: Gynecology
 2: Drug Response and Prognosis
 3: Tumor Margin Assessment
 4: Breast Cancer
 BIOS Hot Topics
 5: Developmental Biology
 6: Cardiovascular Developmental Biology
 Posters-Sunday

Important Dates

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Abstract Due:
18 July 2016

Author Notification:
26 September 2016

Manuscript Due Date:
3 January 2017

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SATURDAY 28 JANUARY

[Show All Abstracts](#)

Session 1: Gynecology

Saturday 28 January 2017

9:00 AM - 10:30 AM

Location: Room 3010 (West Level 3)

 Session Chair: [Melissa C. Skala](#), Morgridge Institute for Research (United States)


Analysis of stromal alterations in ovarian cancers via wavelength dependent second harmonic generation microscopy and optical scattering

(Invited Paper)

Paper 10043-1

Time: 9:00 AM - 9:30 AM

 Author(s): [Paul J. Campagnola](#), [Karissa B. Tilbury](#), [Kirby R. Campbell](#), [Kevin W. Eliceiri](#), [Manish Patankar](#), Univ. of Wisconsin-Madison (United States)

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Mueller matrix colposcope for in-vivo cervical collagen imaging of the uterine-cervix

Paper 10043-2

Time: 9:30 AM - 9:50 AM

 Author(s): [Karla Montejó](#), [Joseph Chue-Sang](#), [Susan Stoff](#), [Nola A. Holness](#), Florida International Univ. (United States); [Amir Gandjbakhche](#), [Viktor V. Chernomordik](#), Eunice Kennedy Shriver National Institute of Child Health and Human Development (United States); [Jessica C. Ramella-Roman](#), Florida International Univ. (United States)


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Novel multiplexed low coherence interferometry endoscopic probe for analyzing the cervical epithelium in vivo

Paper 10043-3

Time: 9:50 AM - 10:10 AM

Author(s): Derek Ho, Kengyeh K. Chu, Michael Crose, Michael Desoto, Jennifer J. Peters, Duke Univ. (United States); Amy P. Murtha, Duke Univ. (United States); Adam Wax, Duke Univ. (United States)


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Assessing the biomechanical properties of the porcine vagina for customized vaginal stents

Paper 10043-4

Time: 10:10 AM - 10:30 AM

Author(s): Manmohan Singh, Univ. of Houston (United States); Julie Hakim, Baylor College of Medicine (United States); Raksha Raghunathan, Univ. of Houston (United States); Alex Smith, Baylor St. Luke's Medical Ctr., CHI St. Luke's Health (United States); Danielle Guffey, Baylor College of Medicine (United States); William E. Cohn, Baylor St. Luke's Medical Ctr., CHI St. Luke's Health (United States); Jennifer E. Dietrich, Kirill V. Larin, Baylor College of Medicine (United States)

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Coffee Break 10:30 AM - 11:00 AM

Session 2: Drug Response and Prognosis

Saturday 28 January 2017

11:00 AM - 12:10 PM

Location: Room 3010 (West Level 3)


Session Chair: [Paul J. Campagnola](#), Univ. of Wisconsin-Madison (United States)

Image-guided therapeutics in experimental ovarian cancer *(Invited Paper)*

Paper 10043-5

Time: 11:00 AM - 11:30 AM

Author(s): Tayyaba Hasan, Wellman Ctr. for Photomedicine (United States)


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Intra-operative label-free multi-modal multi-photon imaging of breast cancer margins and microenvironment

Paper 10043-6

Time: 11:30 AM - 11:50 AM

Author(s): Yi Sun, Univ. of Illinois (United States); Sixian You, Univ. of Illinois at Urbana-Champaign (United States); Haohua Tu, Darold R. Spillman, Marina Marjanovic, Eric J. Chaney, Univ. of Illinois (United States); George Z. Liu, Carle Foundation Hospital (United States); Partha S. Ray, Anna Higham, Mills Breast Cancer Institute (United States); Stephen A. Boppart, Univ. of Illinois (United States)

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Optical metabolic imaging measures early drug response in an allograft murine breast cancer model

Paper 10043-7

Time: 11:50 AM - 12:10 PM

Author(s): Joe T. Sharick, Rebecca S. Cook, Vanderbilt Univ. (United States); Melissa C. Skala, Morgridge Institute for Research (United States), Univ. of Wisconsin (United States)

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Lunch/Exhibition Break 12:10 PM - 1:40 PM

Session 3: Tumor Margin Assessment

Saturday 28 January 2017

1:40 PM - 3:20 PM

Location: Room 3010 (West Level 3)


Session Chair: [Darren M. Roblyer](#), Boston Univ. (United States)

Cost-effective triaging of prostatectomy specimens using light sheet microscopy

Paper 10043-8

Time: 1:40 PM - 2:00 PM

Author(s): Nicholas P. Reder, Univ. of Washington Medical Ctr. (United States); Adam K. Glaser, Univ. of Washington (United States); Lawrence D. True, Univ. of Washington Medical Ctr. (United States); Jonathan T. C. Liu, Univ. of Washington (United States)


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Resection margin assessment during breast conserving surgery: Ex vivo spectroscopic characterization of invasive carcinoma and DCIS

Paper 10043-40

Time: 2:00 PM - 2:20 PM

Author(s): Lisanne L. de Boer, Esther Kho, Koen Van de Vijver, Frederieke van Duijnhoven, The Netherlands Cancer Institute (Netherlands); Benno H. W. Hendriks, Koninklijke Philips N.V. (Netherlands), Technische Univ. Delft (Netherlands); Henricus J.C. M. Sterenberg, Het Nederlands Kanker Instituut - Antoni van Leeuwenhoek Ziekenhuis (Netherlands), Academisch Medisch Centrum (Netherlands); Theo J. M. Ruers, Het Nederlands Kanker Instituut - Antoni van Leeuwenhoek Ziekenhuis (Netherlands), MIRA, Univ. Twente (Netherlands)

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Assessment of fresh, large breast tissue specimens with confocal strip-mosaicking microscopy

Paper 10043-9

Time: 2:20 PM - 2:40 PM


Author(s): Sanjeewa Abeytunge, Memorial Sloan-Kettering Cancer Ctr. (United States); Bjorg A. Larson, Drew Univ. (United States); Gary Peterson, Milind Rajadhyaksha, Melissa Murray, Memorial Sloan-Kettering Cancer Ctr. (United States)

[Add To My Schedule](#) **Breast cancer margin delineation with fluorescence lifetime imaging**

Paper 10043-10

Time: 2:40 PM - 3:00 PM

Author(s): Jennifer E. Phipps, Dimitris Gorpas, Univ. of California, Davis (United States); Morgan Darrow, UC Davis Health System (United States); Jakob Unger, Univ. of California, Davis (United States); Richard Bold, UC Davis Health System (United States); Laura Marcu, Univ. of California, Davis (United States)

[Add To My Schedule](#) **Design of a portable, wide field of view, GPU-accelerated multiphoton imaging system for real-time surgical pathology**

Paper 10043-11

Time: 3:00 PM - 3:20 PM

Author(s): Michael G. Giacomelli, Tadayuki Yoshitake, Lucas C. Cahill, Osman O. Ahsen, Massachusetts Institute of Technology (United States); Lennart A. Husvogt, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); Yury Sheykin, Hilde Vardeh, Beth Israel Deaconess Medical Ctr., Harvard Medical School (United States); Jeff Brooker, Thorlabs, Inc. (United States); James L. Connolly, Beth Israel Deaconess Medical Ctr., Harvard Medical School (United States); Joachim Hornegger, Friedrich-Alexander-Univ. Erlangen-Nürnberg (Germany); Alex Cable, Thorlabs, Inc. (United States); James G. Fujimoto, Massachusetts Institute of Technology (United States)

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Coffee Break 3:20 PM - 3:50 PM

**Session 4:
Breast Cancer**

Saturday 28 January 2017

3:50 PM - 5:30 PM

Location: Room 3010 (West Level 3)


Session Chair: [Anita Mahadevan-Jansen](#), Vanderbilt Univ. (United States)

Spatial frequency domain imaging (SFDI) as a new tool for monitoring chemotherapy response and resistance *(Invited Paper)*

Paper 10043-12

Time: 3:50 PM - 4:10 PM


Author(s): Darren M. Roblyer, Syeda Tabassum, Junjie Wu, David J. Waxman, Boston Univ. (United States)

[Add To My Schedule](#) **Improving breast cancer diagnosis by reducing chest wall effect in US-guided diffuse optical tomography**

Paper 10043-13

Time: 4:10 PM - 4:30 PM


Author(s): Feifei Zhou, Univ. of Connecticut (United States); Atahar Mostafa, Quing Zhu, Washington Univ. in St. Louis (United States)

[Add To My Schedule](#) **Automated adipose map generation for assessing cancerous human breast tissue using optical coherence tomography**

Paper 10043-14

Time: 4:30 PM - 4:50 PM


Author(s): Yu Gan, Xinwen Yao, Columbia Univ. (United States); Ernest W. Chang, Columbia Univ. Medical Ctr. (United States); Syed A. Bin Amir, Columbia Univ. (United States); Hanina Hibshoosh, Sheldon Feldman, Columbia Univ. Medical Ctr. (United States); Christine P. Hendon, Columbia Univ. (United States)

[Add To My Schedule](#) **Diffusion-Sensitive OCT using diffusive GNRs to monitor ECM remodeling by fibroblasts**

Paper 10043-15

Time: 4:50 PM - 5:10 PM


Author(s): Richard L. Blackmon, Rupninder Sandhu, The Univ. of North Carolina at Chapel Hill (United States); Brian S. Chapman, North Carolina State Univ. (United States); Patricia Casbas, Ponce Health Sciences Univ. (United States); Joseph B. Tracy, North Carolina State Univ. (United States); Melissa A. Troester, Amy L. Oldenburg, The Univ. of North Carolina at Chapel Hill (United States)

[Add To My Schedule](#) **Rapid Mueller matrix polarimetry imaging for breast cancer analysis**

Paper 10043-16

Time: 5:10 PM - 5:30 PM

Author(s): Adam Gribble, Alex Vitkin, Univ. of Toronto (Canada)

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**Session HT:
BiOS Hot Topics**

Saturday 28 January 2017
7:00 PM - 9:00 PM
Location: Room 3009 (West Level 3)

SUNDAY 29 JANUARY

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Session 5: Developmental Biology

Sunday 29 January 2017
8:10 AM - 10:10 AM
Location: Room 3010 (West Level 3)

Session Chair: [Andrew M. Rollins](#), Case Western Reserve Univ. (United States)

In vivo imaging and analysis of reproductive activities in the mouse oviduct using optical coherence tomography

Paper 10043-35

Time: 8:10 AM - 8:30 AM

Author(s): Shang Wang, Jason C. Burton, Amanda Rodriguez, Stephanie A. Pangas, Baylor College of Medicine (United States); Richard R. Behringer, The Univ. of Texas M.D. Anderson Cancer Ctr. (United States); Irina V. Larina, Baylor College of Medicine (United States)

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Light-sheet microscopy for quantitative ovarian folliculometry

Paper 10043-17

Time: 8:30 AM - 8:50 AM

Author(s): Amy Lin, Helmholtz Zentrum München GmbH (Germany), Technische Univ. München (Germany); Rahul Dutta, Technische Univ. München (Germany); Subhamoy Mandal, Helmholtz Zentrum München GmbH (Germany), Technische Univ. München (Germany); Alexander Kind, Angelika Schnieke, Technische Univ. München (Germany); Daniel Razansky, Helmholtz Zentrum München GmbH (Germany), Technische Univ. München (Germany)

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A dual-modality optical coherence tomography and selective plane illumination microscopy system for mouse embryonic imaging

Paper 10043-18

Time: 8:50 AM - 9:10 AM

Author(s): Chen Wu, Univ. of Houston (United States); Henry H. Le, Baylor College of Medicine (United States); Shihao Ran, Manmohan Singh, Univ. of Houston (United States); Irina V. Larina, Baylor College of Medicine (United States); David Mayerich, Kirill V. Larin, Univ. of Houston (United States); Mary E. Dickinson, Baylor College of Medicine (United States)

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Bessel beam Fourier multiplexed FLIM tomography for 3D embryonic imaging at cellular resolution

Paper 10043-19

Time: 9:10 AM - 9:30 AM

Author(s): Dongli Xu, The Univ. of Arizona (United States); Weibin Zhou, Univ. of Michigan (United States); Leilei Peng, The Univ. of Arizona (United States)


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Prevention of congenital defects induced by prenatal alcohol exposure

Paper 10043-20

Time: 9:30 AM - 9:50 AM

Author(s): Megan M. Sheehan, Ganga Karunamuni, Case Western Reserve Univ. (United States); Cameron J. Pedersen, STERIS Corp. (United States); Shi Gu, Yong Qiu Doughman, Michael W. Jenkins, Michiko Watanabe, Andrew M. Rollins, Case Western Reserve Univ. (United States)


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Quantification and visualization of injury and regeneration in the developing ciliated epithelium using quantitative flow imaging and speckle variance optical coherence tomography

Paper 10043-21

Time: 9:50 AM - 10:10 AM

Author(s): Ute A. Gamm, Brendan K. Huang, Emily K. Mis, Mustafa K. Khokha, Michael A. Choma, Yale School of Medicine (United States)

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Coffee Break 10:10 AM - 10:40 AM

Session 6: Cardiovascular Developmental Biology

Sunday 29 January 2017
10:40 AM - 12:20 PM
Location: Room 3010 (West Level 3)

Session Chair: [Michael Andrew Choma](#), Yale School of Medicine (United States)


Gender differences in heart morphology and function of wild type Drosophila melanogaster at different developmental stages

Paper 10043-22

Time: 10:40 AM - 11:00 AM

Author(s): Penghe Wu, Lehigh Univ. (United States); Airon Li, Massachusetts General Hospital (United States), Harvard Medical School (United States);

Jing Men, Lehigh Univ. (United States); Rudolph E. Tans, Massachusetts General Hospital (United States); Chao Zhou, Lehigh Univ. (United States)


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Live dynamic analysis of the developing cardiovascular system in mice

Paper 10043-23

Time: 11:00 AM - 11:20 AM

Author(s): Andrew L. Lopez, Shang Wang, Baylor College of Medicine (United States); Kirill V. Larin, Univ. of Houston (United States); Irina V. Larina, Baylor College of Medicine (United States)


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Ex vivo cell counting in whole mount tissue volumes using expansion optical coherence tomography (OCT)

Paper 10043-24

Time: 11:20 AM - 11:40 AM

Author(s): Yehe Liu, Shi Gu, Michiko Watanabe, Andrew M. Rollins, Michael W. Jenkins, Case Western Reserve Univ. (United States)


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Automated assessment of blood flow in developing embryonic hearts by extending dynamic range of Doppler OCT using a MHz FDML swept laser source

Paper 10043-25

Time: 11:40 AM - 12:00 PM

Author(s): Sahar Elahi, Lars Thrane, Andrew M. Rollins, Michael W. Jenkins, Case Western Reserve Univ. (United States)


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Studying the development of early post-implantation mouse embryos by using microCT and lightsheet microscopy

Paper 10043-26

Time: 12:00 PM - 12:20 PM

Author(s): Chih-Wei Hsu, Henry H. Le, Nanbing Li-Villarreal, Victor G. Piazza, Sowmya Kalaga, Mary E. Dickinson, Baylor College of Medicine (United States)

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Session PSun: Posters-Sunday

Sunday 29 January 2017

5:30 PM - 7:30 PM

Location: Moscone West Levels 2 and 3


Conference attendees are invited to attend the BIOS poster session on Sunday evening. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions. Poster authors, view poster presentation guidelines and set-up instructions at <http://spie.org/PWPPosterGuidelines>.

Application of Mueller matrix polarimetry and second harmonic imaging in the determination of uterine-cervix collagen orientation and distribution

Paper 10043-27

Time: 5:30 PM - 7:30 PM

Author(s): Joseph Chue-Sang, Jessica C. Ramella-Roman, Florida International Univ. (United States)


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Development of time-resolved diffuse optical tomography for breast cancer image

Paper 10043-28

Time: 5:30 PM - 7:30 PM

Author(s): Shih-Min Chang, Chun-Jung Huang, Institute of Electro-Optical Engineering, National Chiao Tung Univ. (Taiwan); Chung-Ming Chen, Institute of Biomedical Engineering, National Taiwan Univ. (Taiwan); Chia-Wei Sun, Institute of Electro-Optical Engineering, National Chiao Tung Univ. (Taiwan)


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Side-by-side comparison between confocal and multiphoton microscopy for the evaluation of unfixed human surgical specimens

Paper 10043-29

Time: 5:30 PM - 7:30 PM

Author(s): Tadayuki Yoshitake, Michael G. Giacomelli, Lucas C. Cahill, Massachusetts Institute of Technology (United States); Daniel B. Schmolze, Beth Israel Deaconess Medical Ctr. (United States); Hilde Vardeh, Beverly E. Faulkner-Jones, James L. Connolly, Beth Israel Deaconess Medical Ctr., Harvard Univ. (United States); James G. Fujimoto, Massachusetts Institute of Technology (United States)

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Quantifying the spatial distribution of metabolic heterogeneity in breast cancer

Paper 10043-30

Time: 5:30 PM - 7:30 PM

Author(s): Tiffany M. Heaster, Univ. of Wisconsin-Madison (United States); Alex J. Walsh, National Research Council (United States), Bioeffects Div. Optical Radiation, Air Force Research Lab. (United States); Bennett A. Landman, Vanderbilt Univ. (United States); Melissa C. Skala, Morgridge Institute for Research (United States), Univ. of Wisconsin-Madison (United States)


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Detecting breast cancer using contrast-enhanced multimodal optical imaging

Paper 10043-38

Time: 5:30 PM - 7:30 PM

Author(s): Anna N. Yaroslavsky, Xin Feng, Univ. of Massachusetts Lowell (United States); Anna Moshnikova, Yana K. Reshetnyak, Oleg A. Andreev, The Univ. of Rhode Island (United States); Ashraf Khan, Univ. of Massachusetts Medical School (United States)


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Rare-earth doped nanocomposites enable multiscale targeted short-wave infrared imaging of metastatic breast cancer

Paper 10043-39

Time: 5:30 PM - 7:30 PM

Author(s): Mark C. Pierce, Laura M. Higgins, Vidya Ganapathy, Harini Kantamneni, Richard E. Riman, Charles M. Roth, Prabhas V. Moghe, Rutgers, The State Univ. of New Jersey (United States)


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Optical coherence microscopy with extended focus for *in vivo* embryonic imaging

Paper 10043-31

Time: 5:30 PM - 7:30 PM

Author(s): Yu Chen, The Univ. of Southern California (United States); Jeff Fingler, Varocto, Inc. (United States); Scott E. Fraser, The Univ. of Southern California (United States)


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Brillouin microspectroscopy assessment of tissue differentiation during embryonic development

Paper 10043-32

Time: 5:30 PM - 7:30 PM

Author(s): Maria A. Troyanova-Wood, Hannah Silverberg, Zhaokai Meng, Vladislav V. Yakovlev, Texas A&M Univ. (United States)

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Peroperative imaging of human fallopian tubes using endoscopic optical coherence tomography and fluorescence spectroscopy for ovarian cancer detection

Paper 10043-33

Time: 5:30 PM - 7:30 PM

Author(s): Wendy-Julie Madore, Ecole Polytechnique de Montréal (Canada), Ctr. Hospitalier de l'Univ. de Montréal (Canada); Étienne De Montigny, Mikael Leduc, Ecole Polytechnique de Montréal (Canada); Anne-Marie Mes-Masson, CRCHUM, Univ. de Montréal (Canada); Nicolas Godbout, Caroline Boudoux, Ecole Polytechnique de Montréal (Canada); Kurosh Rahimi, Diane Provencher, CRCHUM, Univ. de Montréal (Canada)


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Ultrasound-guided spectral photoacoustic imaging of placental oxygenation

Paper 10043-34

Time: 5:30 PM - 7:30 PM

Author(s): Dylan Lawrence, Tulane Univ. (United States); Stanislav Y. Emelianov, Georgia Institute of Technology (United States); Carolyn L. Bayer, Tulane Univ. (United States)


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Structured light profilometry for designated breast surface coordinate variation analysis

Paper 10043-36

Time: 5:30 PM - 7:30 PM

Author(s): Rajendaran Vairavan, Vithyacharan Retnasamy, Univ. Malaysia Perlis (Malaysia); Mukhzeer Mohamad Shahimin, National Defence Univ. of Malaysia (Malaysia); Zaliman Sauli, Siang Leng Lai, Wan Mokhzani Wan Norhaimi, Univ. Malaysia Perlis (Malaysia); Prema Boshani Retnasamy, Othman Abdullah, Sultan Abdul Halim Hospital (Malaysia); Supap Kirtsaeng, Silpakom University (Thailand)


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3D mapping of breast surface using digital fringe projection

Paper 10043-37

Time: 5:30 PM - 7:30 PM

Author(s): Rajendaran Vairavan, Vithyacharan Retnasamy, Univ. Malaysia Perlis (Malaysia); Mukhzeer Mohamad Shahimin, National Defence Univ. of Malaysia (Malaysia); Zaliman Sauli, Lai Siang Leng, Wan Mokhzani Wan Norhaimi, Univ. Malaysia Perlis (Malaysia); Rajeswaran Marimuthu, Othman Abdullah, Hospital Sultan Abdul Halim (Malaysia); Supap Kirtsaeng, Faculty of Science, Silpakom University (Thailand)

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Combined glucose and lipid metabolism reveals the correlation of cancer metabolism and invasiveness

Paper 10043-41

Time: 5:30 PM - 7:30 PM

Author(s): Jue Hou, Beckman Laser Institute and Medical Clinic (United States); Elliot L. Botvinick, Eric O. Potma, Univ. of California, Irvine (United States); Bruce J. Tromberg, Beckman Laser Institute and Medical Clinic (United States)

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