

TECHNICAL  
PROGRAM

# **SPIE.** TRANSLATIONAL BIOPHOTONICS+ADDITIVE MANUFACTURING

**16 - 18 September 2024**

Rice University  
Houston, Texas, USA

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# **SPIE.** TRANSLATIONAL BIOPHOTONICS+ADDITIVE MANUFACTURING

**16 - 18 September 2024**

Rice University  
Houston, Texas, USA

Welcome to these co-located meetings merging translational biophotonics and applications, and novel additive manufacturing technologies in any area of photonics.

At Rice University, Bioscience Research Collaborative, leaders in the field will discuss paths that led to their advancements and will also plot new directions for the future of optical imaging and photonics for both research and clinical applications. Clinicians will present their perspectives on application needs, while industry representatives will discuss pathways to commercialization.

## 2024 CONFERENCE CHAIRS



**Tomasz Tkaczyk**  
Rice Univ. (USA)



**Brian E. Applegate**  
Keck School of Medicine of  
USC (USA)

## PROGRAM COMMITTEE

**Rebecca R. Richards-Kortum**  
Rice Univ. (USA)

**Mary-Ann Mycek**  
Univ. of Michigan (USA)

**Mark C. Pierce**  
Rutgers, The State Univ. of New Jersey (USA)

## **FABRICATION/MEDICAL CENTER TOURS**

**18 September 2024**  
**9:00 AM - 12:30 PM**

Join us for tours of nearby facilities. Sign up onsite at the registration desk.

TIME	MONDAY 16 SEPTEMBER
8:00 AM - 8:20 AM	<b>SESSION 1: WELCOME AND TPP TUTORIAL</b>
8:10 AM	13186-1 • Tutorial <b>Introduction and two-photon polymerization tutorial</b> , Tomasz S. Tkaczyk, Rice Univ. (USA)
8:20 AM - 11:10 AM	<b>SESSION 2: TWO-PHOTON POLYMERIZATION</b>
8:20 AM	13186-2 • Invited Paper <b>Revolutionizing biomedical fabrication: two-photon polymerization for multimaterial 3D printing</b> , Benjamin Richter, Nanoscribe GmbH & Co. KG (Germany)
8:50 AM	13186-3 • Invited Paper <b>QuantumX: leveraging two-photon grayscale lithography (2GL®) to revolutionize 3D printing</b> , Andrea Bertoncini, Nanoscribe GmbH & Co. KG (Germany)
9:20 AM	13186-4 • Invited Paper <b>Meta-fibers: merging nanophotonics with optical fibers via 3D nanoprinting for tailored beam manipulation and optical trapping</b> , Markus A. Schmidt, Friedrich-Schiller-Univ. Jena (Germany); Jisoo Kim, Matthias Zeisberger, Malte Plidschun, Leibniz-Institut für Photonische Technologien e.V. (Germany); Chenhao Li, Ludwig-Maximilians-Univ. München (Germany); Haoran Ren, Monash Univ. (Australia); Johannes Bürger, Ludwig-Maximilians-Univ. München (Germany); Stefan A. Maier, Monash Univ. (Australia)
9:50 AM - 10:10 AM	Coffee Break
10:10 AM	13186-5 • Invited Paper <b>A micro-printed waveguide structure for on-fibre broadband OAM mode division multiplexing</b> , Georg von Freymann, Julian Schulz, Rheinland-Pfälzische Technische Univ. Kaiserslautern-Landau (Germany)
10:40 AM	13186-6 • Invited Paper <b>Exploring process-microstructure-property relationships in 3D-printed inorganic nanomaterials</b> , Jun Lou, Rice Univ. (USA)
11:10 AM - 12:55 PM	<b>SESSION 3: APPLICATIONS IN THE EAR</b>
11:10 AM	13186-7 • Invited Paper <b>Application of Optical Coherence Tomography for Imaging the Ear</b> , John S. Oghalai, Brian E. Applegate, Keck School of Medicine of USC (USA)
11:55 AM	13186-9 • Invited Paper <b>Learnings from the design and development of OtoSight: a commercially available OCT imager for the middle ear</b> , Ryan L. Shelton, PhotoniCare, Inc. (USA)
12:25 PM	13186-10 • Invited Paper <b>Micro-optical coherence tomography endoscopy towards in vivo imaging of the human inner ear</b> , Fang Hou, Massachusetts General Hospital (USA)
12:55 PM - 1:55 PM	Lunch Break

1:55 PM - 3:25 PM	<b>SESSION 4: BIOPHOTONICS I</b>
1:55 PM	13186-11 • Invited Paper <b>The challenges of translating molecular fluorescent agents to the clinic</b> , Samuel Achilefu, The Univ. of Texas Southwestern Medical Ctr. at Dallas (USA)
2:25 PM	13186-12 • Invited Paper <b>Machine learning to overcome specificity limitations of autofluorescence imaging for metabolism measurements</b> , Alex J. Walsh, Texas A&M Univ. (USA)
4:55 PM	2:55 PM • Invited Paper <b>Label-free, high resolution, optical metabolic imaging of living tissues</b> , Irene Georgakoudi, Tufts Univ. (USA)
3:25 PM - 3:55 PM	Coffee Break
3:55 PM - 5:25 PM	<b>SESSION 5: BIOPHOTONICS II</b>
3:55 PM	13186-14 • Invited Paper <b>Fluorescence lifetime imaging for disease detection and surgical guidance</b> , Alba Alfonso García, Univ. of California, Davis (USA)
4:25 PM	13186-15 • Invited Paper <b>Brillouin microscopy for cell and tissue imaging</b> , Giuliano Scarcelli, Univ. of Maryland, College Park (USA)
13186-16	TBP101-16 • Invited Paper <b>Towards clinical implementation of nonlinear imaging and ultrafast laser surgery probes</b> , dela Ben-Yakar, The Univ. of Texas at Austin (USA)
<b>TIME</b>	<b>TUESDAY 17 SEPTEMBER</b>
8:00 AM - 10:00 AM	<b>SESSION 6: PHOTOACOUSTICS</b>
8:00 AM	13186-17 • Invited Paper <b>Advancing photoacoustic tomography: from benchtop wholebody imagers to wearable devices</b> , Lei S. Li, Rice Univ. (USA)
8:30 AM	13186-18 • Invited Paper <b>Photoacoustic-ultrasonic imaging: translational potential and pitfalls</b> , Richard Bouchard, The Univ. of Texas M.D. Anderson Cancer Ctr. (USA)
9:00 AM	13186-19 • Invited Paper <b>Personalizing cancer photo-theranostics with nano enabled ultrasound guided photoacoustic imaging</b> , Srivalleesha Mallidi, Tufts Univ. (USA)
9:30 AM	13186-20 • Invited Paper <b>Ionizing radiation acoustic imaging (iRAI) for mapping the dose deep in the patient during radiation therapy</b> , Xueding Wang, Univ. of Michigan (USA)
10:00 AM - 10:30	Coffee Break

10:30 AM - 12:30 PM	<b>SESSION 7: TWO-PHOTON POLYMERIZATION: APPS</b>
10:30 AM	13186-21 • Invited Paper <b>From light to sound: breaking the limits in photoacoustic imaging and ultrasound bioprinting</b> , Junjie Yao, Duke Univ. (USA)
11:00 AM	13186-22 • Invited Paper <b>3D-printed optical tissue phantoms: accelerating clinical translation in fluorescence-guided surgery</b> , Alberto J. Ruiz, QUEL Imaging, LLC (USA)
11:30 AM	13186-23 • Invited Paper <b>Low-cost 3D printed microscope for decentralized cancer diagnosis</b> , Daniel G. Rosen, Baylor College of Medicine (USA)
12:00 PM	13186-24 • Invited Paper <b>3D printing for drug delivery</b> , Kevin McHugh, Rice Univ. (USA)
12:30 PM - 1:30 PM	Lunch Break
1:30 PM - 3:30 PM	<b>SESSION 8: ENABLING TRANSLATION</b>
1:30 PM	13186-25 • Invited Paper <b>Accelerating innovation and technology development through engineering-medicine partnerships</b> , Bruce J. Tromberg, National Institute of Biomedical Imaging and Bioengineering (USA)
2:00 PM	13186-26 • Invited Paper <b>Accelerating science with the Chan Zuckerberg Initiative</b> , Jennifer K. Barton, The Univ. of Arizona (USA)
2:30 PM	13186-27 • Invited Paper <b>Miniature endoscope design for early cancer detection</b> , Kristen C. Maitland, Chan Zuckerberg Initiative (USA)
3:00 PM	13186-28 • Invited Paper <b>Point-of-care diagnostics to improve early detection of cancer: global needs and how biophotonics can make a difference</b> , Rebecca R. Richards-Kortum, Rice Univ. (USA)
3:30 PM - 4:00 PM	Coffee Break
4:00 PM - 6:00 PM	<b>SESSION 9: BIOPHOTONICS III</b>
4:00 PM	13186-29 • Invited Paper <b>Translational clinical biophotonics</b> , Michael Schmitt, Friedrich-Schiller-Univ. Jena (Germany); Jürgen Popp, Leibniz-Institut für Photonische Technologien e.V. (Germany)
4:30 PM	13186-30 • Invited Paper <b>Spectrally-resolved imaging in vivo: providing surgical guidance using vision and robotics</b> , Daniel S. Elson, Imperial College London (United Kingdom)
5:00 PM	13186-31 • Invited Paper <b>New translational technologies for functional retinal imaging</b> , Maciej Wojtkowski, Institute of Physical Chemistry (Poland)
5:30 PM	13186-32 • Invited Paper <b>Personalized photonic diagnostic and therapeutic devices and procedures using additive manufacturing</b> , Thomas E. Milner, Beckman Laser Institute and Medical Clinic (USA)
6:00 PM - 6:05 PM	Break

6:05 PM - 6:30 PM	<p><b>POSTER FLASH SESSION</b> The flash poster session will feature select poster authors giving short presentations.</p>
6:30 PM - 8:00 PM	<p><b>POSTER SESSION AND NETWORKING RECEPTION</b> Conference participants are invited to attend the poster session and reception on Tuesday evening. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field.</p>
13186-33	<p><b>Laser therapy for 'bone -fracture'</b>, Mohammad Nazrul Islam, National Institute of Traumatology and Orthopaedic Rehabilitation (Bangladesh), Shaheed Suhrawardy Medical College and Hospital (Bangladesh); Golam Abu Zakaria, Kreiskrankenhaus Gummersbach (Germany), Univ. zu Köln (Germany); Kazi Shamimuzzaman, Paritosh Chandra Debenath, National Institute of Traumatology and Orthopaedic Rehabilitation (Bangladesh)</p>
13186-34	<p><b>Classification and identification of COVID-19 from Raman spectra using LASSO-regularized convolutional neural networks</b>, Fan Che, Wandan Zeng, Shanghai Institute of Technology (China)</p>
13186-36	<p><b>Photothermal mid-infrared spectroscopic imaging in biomedical diagnostics</b>, Rohith K. Reddy, Univ. of Houston (USA)</p>
13186-37	<p><b>Dual-modality high-resolution microendoscope with adjustable imaging depth for in vivo cancer detection</b>, Huayu Hou, Alex Kortum, Jennifer Carns, Richard A. Schwarz, Rebecca Richards-Kortum, Rice Univ. (USA)</p>
13186-38	<p><b>Pre-transplantation evaluation of human liver using polarization-sensitive optical coherence tomography</b>, Feng Yan, Chen Wang, Bornface M. Mutembei, Zaid A. Alhajeri, Qinghao Zhang, Ebenezer Raj Selvaraj Mercyshalinie, The Univ. of Oklahoma (USA); Zhongxin Yu, Kar-Ming Fung, The Univ. of Oklahoma Health Sciences Ctr. (USA); Qinggong Tang, The Univ. of Oklahoma (USA)</p>
13186-39	<p><b>Multimodal, multiscale deep learning algorithm for automated diagnostic classification of cervical cancer</b>, Karthik Goli, Rice Univ. (USA), Baylor College of Medicine (USA); David Brenes, Jackson B. Coole, Yajur N. Maker, Jennifer Carns, Richard A. Schwarz, Rice Univ. (USA); Júlio C. Possati-Resende, Karen C. Borba Souza, Hospital de Câncer de Barretos (Brazil); Mila P. Salcedo, Kathleen M. Schmeler, The Univ. of Texas M.D. Anderson Cancer Ctr. (USA); Rebecca Richards-Kortum, Rice Univ. (USA)</p>
13186-40	<p><b>A deep learning mucosal segmentation algorithm for a mobile detection of oral cancer (mDOC) platform</b>, Mengyuan Xue, Ruchika Mitbander, Jennifer Carns, Richard A. Schwarz, Rice Univ. (USA); Nadarajah Vigneswaran, The Univ. of Texas School of Dentistry (USA); Ann M. Gillenwater, The Univ. of Texas M.D. Anderson Cancer Ctr. (USA); Rebecca Richards-Kortum, Rice Univ. (USA)</p>
13186-41	<p><b>Development of planar waveguide structure for detecting hearing disorders by optical coherence tomography</b>, Yicheng Ma, Rice Univ. (USA); Brian E. Applegate, The Univ. of Southern California (USA); Tomasz Tkaczyk, Rice Univ. (USA)</p>

13186-42

**Epidural needle guidance using a forward-view polarization-sensitive optical coherence tomography probe**, Chen Wang, Yunlong Liu, Paul Calle, Qinghao Zhang, Feng Yan, The Univ. of Oklahoma (USA); Kar-Ming Fung, Sixia Chen, The Univ. of Oklahoma Health Sciences Ctr. (USA); Chongle Pan, Qinggong Tang, The Univ. of Oklahoma (USA)

13186-43

**Microfabrication of simple, adaptable, and versatile microfluidic channels compatible with single-objective light sheet and epifluorescence single-molecule localization microscopy**, Nahima Saliba, Gabriella Gagliano, Anna-Karin Gustavsson, Rice Univ. (USA)

13186-44

**Snapshot hyperspectral imaging spectrometer with 2-photon polymerization cladded waveguide array**, Haimu Cao, Coby McNichols, Rice Univ. (USA); Brian E. Applegate, The Univ. of Southern California (USA); Tomasz Tkaczyk, Rice Univ. (USA)

13186-45

**Non-Invasive Characterization of Systemic Sclerosis Using Multifunctional OCT/OCE/OCTA**, Pavel V. Nikitin, Jessica Gutierrez, Manmohan Singh, Salavat R. Aglyamov, Kirill V. Larin, Univ. of Houston (USA)

13186-46

**Non-contact molecular specific transient absorption microscopy**, Ardalan Farazmand, Scott P. Mattison, Oklahoma State Univ. (USA)

13186-47

**Biomechanical characterization of ex-vivo crystalline lenses using non-contact optical coherence elastography**, Amandeep Singh, Mohammad Dehshiri, Manmohan Singh, Salavat Aglyamov, Kirill V. Larin, Univ. of Houston (USA)

13186-48

**Optimization of stains for slide-free histopathology of head & neck tumors using deep-learning depth-of-field microscope**, Bakai Sheyitov, Rice Univ. (USA), The Univ. of Texas M.D. Anderson Cancer Ctr. (USA); Cheima Hicheri, Kushal Vyas, Lingbo Jin, Yubo Tang, Rice Univ. (USA); Pavel Tsitovich, Michelle D. Williams, Ann M. Gillenwater, Konstantin Sokolov, The Univ. of Texas M.D. Anderson Cancer Ctr. (USA); Ashok Veeraraghavan, Rebecca Richards-Kortum, Rice Univ. (USA)

13186-49

**2-photon polymerization hybrid miniature endomicroscopic objective for non-linear imaging**, Jinyun Liu, Rice Univ. (USA)

13186-50

**Design and fabrication of encapsulated refractive miniature lenses using two phases of the same material via 2-photon polymerization**, Kevin Beckford, Rice Univ. (USA)

13186-51

**Rapid volumetric light-sheet imaging of zebrafish heart**, Xinyuan Zhang, Jichen Chai, Alireza Saberigarakani, Milad Almasian, Riya P. Patel, The Univ. of Texas at Dallas (USA); Yifei Lou, The Univ. of North Carolina at Chapel Hill (USA); Yichen Ding, The Univ. of Texas at Dallas (USA)



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13186-52

**3D isotropic resolution light-sheet imaging to elucidate the cardiac structure of mouse hearts**, Milad Almasian, Alireza Saberigarakani, Xinyuan Zhang, The Univ. of Texas at Dallas (USA); Yichen Ding, The Univ. of Texas at Dallas (USA), Ctr. for Imaging and Surgical Innovation (USA), Hamon Ctr. for Regenerative Science and Medicine, The Univ. of Texas Southwestern Medical Ctr. at Dallas (USA)

13186-53

**Multimodal colposcopy with automated image analysis for cervical cancer diagnosis in low- and middle-income countries**, Yajur N. Maker, David Brenes, Jackson B. Coole, Karthik Goli, Rice Univ. (USA); Júlio C. Possati-Resende, Márcio Antoniazzi, Bruno Oliveira Fonseca, Hospital de Câncer de Barretos (Brazil); Alex Kortum, Imran S. Vohra, Richard A. Schwarz, Jennifer Carns, Rice Univ. (USA); Karen C. Borba Souza, Iara V. Vidigal Santana, Flávia Fazzio Barbin, Hospital de Câncer de Barretos (Brazil); Regis Kreitchmann, Fernanda Uratani, Felipe Luzzatto, Univ. Federal de Ciências da Saúde de Porto Alegre (Brazil); Nirmala Ramanujam, Duke Univ. (USA); Kathleen M. Schmeler, Mila P. Salcedo, The Univ. of Texas M.D. Anderson Cancer Ctr. (USA); Rebecca Richards-Kortum, Rice Univ. (USA)

13186-54

**A compact fiber laser based stimulated Raman photothermal microscope with ease of operation**, Xiaowei Ge, Dingcheng Sun, Hongli Ni, Yifan Zhu, Boston Univ. (USA); Yueming Li, The Boston Univ. (USA); Chinmayee V. Prabhu Dessai, Ji-Xin Cheng, Boston Univ. (USA)

13186-55

**Millimeter-deep micron-resolution vibrational imaging by shortwave infrared photothermal microscopy**, Hongli Ni, Yuhao Yuan, Mingsheng Li, Yifan Zhu, Xiaowei Ge, Jiase Yin, Chinmayee V. Prabhu Dessai, Le Wang, Ji-Xin Cheng, Boston Univ. (USA)

13186-56

**Fabrication of a complex waveguide array using two-photon polymerization (2PP) to enable high-resolution spectral domain snapshot OCT**, Roger McNichols, Haimu Cao, Rice Univ. (USA); Brian E. Applegate, The Univ. of Southern California (USA); Tomasz Tkaczyk, Rice Univ. (USA)

13186-57

**The first generation of fully printed green infrared image sensors based on Lead free quantum dots**, AmirAbbas Yousefi Amin, Maryam Ghassemi, Ludwig-Maximilians-Univ. München (Germany)

13186-58

**High-resolution flexible NIR photodetectors fabricated with sequential printing of hybrid semiconductor/metal layers**, Maryam Ghassemi, Julius-Maximilians-Univ. Würzburg (Germany)

13186-59

**Calibration for 3D OCT vibrometry to reconstruct 3D vector of motion in mouse cochlea**, Julianna Bordas, Michael J. Serafino, Patricia M. Quiñones, Wihan Kim, Frank D. Macías-Escrivá, John S. Oghalai, Brian E. Applegate, The Univ. of Southern California (USA)

13186-60

**Quantification of the healthy and pathological tympanic membrane with a hand-held optical coherence tomography (HHOCT) device**, Marcela Morán, Zihan Yang, Long Ryan, Wihan Kim, John S. Oghalai, Brian E. Applegate, The Univ. of Southern California (USA)



13186-61

**Dynamic optical coherence tomography strongly enhances contrast in the post-mortem murine cochlea**, Michael J. Serafino, The Univ. of Southern California (USA); Clayton B. Walker, The Univ. of Southern California (USA), Texas A&M Univ. (USA); Patricia M. Quiñones, The Univ. of Southern California (USA); Bong Jik Kim, Chungnam National Univ. College of Medicine (Korea, Republic of); Juemei Wang, Frank D. Macías-Escrivá, John S. Oghalai, Brian E. Applegate, The Univ. of Southern California (USA)

13186-62

**Frequency comb-based SD-OCT for enhanced roll-off performance**, Regina Magalhães, Michael J. Serafino, John S. Oghalai, Brian E. Applegate, The Univ. of Southern California (USA)

13186-63

**Blood coagulation monitoring using refractive index**, John B. Forshay, Luis Trabucco, Jingyong Ye, The Univ. of Texas at San Antonio (USA)

13186-64

**Development of a hand-held OCT laryngoscope towards improving outpatient vocal fold assessment**, Anna M. Wisniowiecki, Texas A&M Univ. (USA), The Univ. of Southern California (USA); Marcela Moran, Diego Razura, Wihan Kim, The Univ. of Southern California (USA); Clayton Walker, Texas A&M Univ. (USA), The Univ. of Southern California (USA); Michael M. Johns, Brian E. Applegate, The Univ. of Southern California (USA)

13186-65

**A 3D-printed reflective lens fabricated via 2-photon polymerization for flexible oct catheter endoscopy of the porcine middle ear through the eustachian tube**, Clayton B. Walker, Texas A&M Univ. (USA); Kevin Beckford, Tomasz S. Tkaczyk, Rice Univ. (USA); Brian E. Applegate, Keck School of Medicine of USC (USA)

13186-66

**A cost effective capsule endoscope for unsedated screening and early Detection of Barrett's esophagus**, Cheima Hicheri, Alex Kortum, Yubo Tang, Richard Schwarz, Rice University (USA); Daniel Rosen Rosen, Nabil Mansour, Shaleen Vasavada, Baylor College of Medicine (USA); Jennifer Carns, Rice University (USA); Sharmila Anandasabapathy, Baylor College of Medicine (USA); Rebecca Richards-Kortum, Rice University (USA)

13186-67

**Development of prognostic biomarker for ovarian cancer using high-resolution digital pathology for spatial statistical analysis of platelets**, Ju Young Ahn, Stephen T. Wong, Houston Methodist Research Institute (USA)

13186-68

**Enhancing surgical precision and timelines: generative AI models for translating CARS imaging to H&E pseudo-staining**, Daniel S. Kermany, Translational Biophotonics Laboratory, Department of Systems Medicine and Bioengineering, Houston Methodist Neal Cancer Center (USA), Department of Biomedical Engineering, Texas A&M University (USA), School of Medicine, Texas A&M Health Science Center, Texas A&M University (USA); Raksha Raghunathan, Translational Biophotonics Laboratory, Houston Methodist Neal Cancer Center (USA); Stephen T. Wong, Translational Biophotonics Laboratory, Houston Methodist Neal Cancer Center (USA), Department of Biomedical Engineering, Texas A&M University (USA), Department of Bioengineering, Rice University (USA)

13186-69

**Differentiating between normal and cancerous thyroid tissue using quantitative Second Harmonic Generation microscopy**, Raksha Raghunathan, Stephen Wong, Orhun Davarci, The Methodist Hospital Research Institute (USA)

13186-70

**Digital Spatial Profiling (DSP) technology uncovers microenvironmental remodeling and immune dynamics in T-DXd resistant metastatic breast cancer**, Glori Das, Department of Systems Medicine and Bioengineering, Houston Methodist Neal Cancer Center, Houston Methodist Hospital (USA), Department of Biomedical Engineering, Texas A&M University (USA), Texas A&M University College of Medicine (USA); Xiaoxian Li, Department of Pathology and Laboratory Medicine, Emory University School of Medicine (USA); Stephen T.C. Wong, Department of Systems Medicine and Bioengineering, Houston Methodist Neal Cancer Center (USA), Department of Biomedical Engineering, Texas A&M University (USA), Advanced Cellular and Tissue Microscopy Shared Resource, Houston Methodist Research Institute (USA)

13186-71

**Development of a uv-crosslinkable surface-eroding microparticle delivery platform for the controlled release of protein drugs**, Chia-Chien Hsu, Kevin J. McHugh, Rice University (USA)

13186-72

**Surface-eroding core-shell microparticles for the delayed release of vaccines to prevent immune interference**, Katherine Chen, Rice University (USA)

13186-73

**Exploring pulsatile release microparticles to achieve single-injection vaccination for rabies postexposure prophylaxis**, Tyler Graf, Rice University (USA)

13186-74

**In vivo volumetric depth-resolved imaging of cilia metachronal wave with dynamic optical coherence tomography**, Tian Xia, Baylor College of Medicine (United States); Kohei Umezumi, Baylor college of medicine (United States); Deirdre Scully, baylor college of medicine (United States); Shang Wang, stevens institute of technology (United States); Irina V. Larina, Baylor college of medicine (United States)

13186-75

**Quantitative OCT angiography for 4D blood flow analysis in the embryonic cardiovascular system**, Michaela A. McCown, Irina V. Larina, Baylor College of Medicine (United States)

13186-76

**Multiview Photoacoustic Computed Tomography: Leveraging Linear Arrays for Superior Resolution in 3D Imaging**, Jingyi Miao, Shun Yao Zhang, Lei Li, Rice Univ (United States)

13186-77

**The NIH POCTRN Center**

TIME	<b>WEDNESDAY 18 SEPTEMBER</b>
9:00 AM - 12:30 PM	<b>FABRICATION/MEDICAL CENTER TOURS</b> Join us for tours of nearby facilities.

## Family care while attending the meeting

### Mothers' Room, BRC Room 110

The BRC is equipped with bathrooms with changing tables and a room in close proximity reserved as a breast feeding station.

In addition, there are local providers offering Drop-in Childcare. One such provider\* is Kids Garden, which offers drop-in childcare services and is located in close proximity to Rice University:

### Kids Garden Houston

6729 Stella Link Rd.  
West University Place, TX 77005  
713-485-4418  
Mon - Fri: 8:00am - 5:30pm

\*SPIE is not affiliated with this service and is only offering this as an example.

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