

## Optical Elastography and Tissue Biomechanics VI

Saturday - Sunday 2 - 3 February 2019

### Conference Sessions At A Glance

SHOW | HIDE

1: Optical Coherence Elastography I  
 2: Cell Biomechanics  
 3: Keynote Session  
 4: Computation and Modeling  
 5: Novel Methods I  
 Posters-Saturday  
 BIOS Hot Topics  
 6: Optical Coherence Elastography II  
 7: Novel Methods II  
 8: Biomechanics of the Eye  
 9: Brillouin Elastography

### Important Dates

SHOW | HIDE

Abstract Due:  
25 July 2018

Author Notification:  
1 October 2018

Manuscript Due Date:  
11 January 2019

### Conference Cosponsors



### Conference Committee

SHOW | HIDE

#### Conference Chairs

[Kirill V. Larin](#), Univ. of Houston (United States)  
[Giuliano Scarcelli](#), Univ. of Maryland, College Park (United States)

#### Program Committee

[Steven G. Adie](#), Cornell Univ. (United States)  
[Jeffrey C. Bamber](#), Institute of Cancer Research (United Kingdom)  
[Albert Claude Boccara](#), Institut Langevin (France)  
[Stephen A. Boppart](#), Univ. of Illinois at Urbana-Champaign (United States)  
 Brett E. Bouma, Wellman Ctr. for Photomedicine (United States)  
[Zhongping Chen](#), Beckman Laser Institute and Medical Clinic (United States)  
[Kishan Dholakia](#), Univ. of St. Andrews (United Kingdom)  
[Christine P. Hendon](#), Columbia Univ. (United States)  
[Davide Iannuzzi](#), Vrije Univ. Amsterdam (Netherlands)  
 Brendan F. Kennedy, The Univ. of Western Australia (Australia)  
[Sean J. Kirkpatrick](#), Michigan Technological Univ. (United States)  
[Matthew O'Donnell](#), Univ. of Washington (United States)

Program Committee continued...

[Amy L. Oldenburg](#), The Univ. of North Carolina at Chapel Hill (United States)  
[Gabriel Popescu](#), Univ. of Illinois at Urbana-Champaign (United States)  
[Jannick P. Rolland](#), Univ. of Rochester (United States)  
[David D. Sampson](#), Univ. of Surrey (United Kingdom)  
[Ian A. Sigal](#), Univ. of Pittsburgh (United States)  
 Gijs van Soest, Erasmus MC (Netherlands)  
 Kandice Tanner, National Cancer Institute (United States)  
[Peter Török](#), Imperial College London (United Kingdom)  
[Ruikang K. Wang](#), Univ. of Washington (United States)  
[Vladislav V. Yakovlev](#), Texas A&M Univ. (United States)  
[Seok Hyun A. Yun](#), Harvard Univ. (United States)  
 Vladimir Y. Zaitsev, Russian Academy of Science Nizhny Novgorod (Russian Federation)  
[Qifa Zhou](#), The Univ. of Southern California (United States)

SATURDAY 2 FEBRUARY

[Show All Abstracts](#)

### Chairs' Welcome

Saturday 2 February 2019  
8:25 AM - 8:30 AM

Conference Chairs: [Kirill V. Larin](#), Univ. of Houston (United States); [Giuliano Scarcelli](#), Univ. of Maryland, College Park (United States)

### Session 1: Optical Coherence Elastography I

Saturday 2 February 2019  
8:30 AM - 10:15 AM

Session Chairs: [Sean J. Kirkpatrick](#), Michigan Technological Univ. (United States); [Brett E. Bouma](#), Wellman Ctr. for Photomedicine (United States); [Ian A. Sigal](#), Univ. of Pittsburgh (United States)

**Linear and nonlinear optical coherence elastography in three dimensions** *(Invited Paper)*

Paper 10880-1


Author(s): Assad A. Oberai, The Univ. of Southern California (United States); Nicholas Hugenberg, Rensselaer Polytechnic Institute (United States); Matt Hepburn, Philip Wijesinghe, The Univ. of Western Australia (Australia); Dawei Song, The Univ. of Southern California (United States); Brendan Kennedy, The Univ. of Western Australia (Australia)

[Add To My Schedule](#) 

**Assessment of the biomechanical changes in cardiac tissue after myocardial infarction with optical coherence elastography**

Paper 10880-2


Author(s): Manmohan Singh, Univ. of Houston (United States); Shang Wang, Thuy T. Tran, John P. Leach, Baylor College of Medicine (United States); Salavat R. Aglyamov, Univ. of Houston (United States); Irina V. Larina, Baylor College of Medicine (United States); James F. Martin, Baylor College of Medicine (United States), Texas Heart Institute (United States); Kirill V. Larin, Univ. of Houston (United States), Baylor College of Medicine (United States), National Research Tomsk State Univ. (Russian Federation)

[Add To My Schedule](#) 

**Correlation of optical coherence elastography with clinical evaluation of systemic sclerosis**

Paper 10880-3


Author(s): Chih-Hao Liu, Alexander Schill, Manmohan Singh, Chen Wu, Hongqiu Zhang, Chandra Mohan, Univ. of Houston (United States); Sam Theodore, Shervin Assassi, The Univ. of Texas Health Science Ctr. at Houston (United States); Kirill V. Larin, Univ. of Houston (United States)

[Add To My Schedule](#) 

**A finger-mounted palpation-mimicking probe for optical coherence elastography**

Paper 10880-4


Author(s): Rowan Sanderson, Philip Wijesinghe, Harry Perkins Institute of Medical Research (Australia), The Univ. of Western Australia (Australia); Andrea Curatolo, Harry Perkins Institute of Medical Research (Australia), The Univ. of Western Australia (Australia), Instituto de Optica "Daza de Valdés", Consejo Superior de Investigaciones Científicas (Spain); Lixin Chin, Brendan Kennedy, Harry Perkins Institute of Medical Research (Australia), The Univ. of Western Australia (Australia)

[Add To My Schedule](#) 

**Ex vivo measurement of biaxial strain distribution in articular cartilage with optical coherence tomography**

Paper 10880-5


Author(s): Brecken J. Blackburn, Mostafa Motavalli, Case Western Reserve Univ. (United States); Matthew R. Ford, Cleveland Clinic (United States); Jean F. Welter, Joseph M. Mansour, Andrew M. Rollins, Case Western Reserve Univ. (United States)

[Add To My Schedule](#) 

**Optimal frequency for vibrational optical coherence elastography (OCE) on tissue mechanical properties characterization**

Paper 10880-6

Author(s): Duo Zhang, Univ. of Dundee (United Kingdom)

[Add To My Schedule](#) 

## Session 2: Cell Biomechanics

Saturday 2 February 2019


10:45 AM - 12:00 PM

Session Chairs: [Jannick P. Rolland](#), Univ. of Rochester (United States) ; [David D. Sampson](#), Univ. of Surrey (United Kingdom) ; [Jeffrey C. Bamber](#), The Institute of Cancer Research (United Kingdom)

**High-frequency active microrheology in 3D reveals mismatch between tumor cell cytoskeletal and extracellular matrix mechanics** *(Invited Paper)*

Paper 10880-7


Author(s): Kandice Tanner, National Cancer Institute (United States)

[Add To My Schedule](#) 

**Traction force optical coherence microscopy for single- and multi-cellular systems**

Paper 10880-8


Author(s): Jeffrey A. Mulligan, Cornell Univ. (United States); Xinzeng Feng, The Univ. of Texas at Austin (United States); Lu Ling, Claudia Fischbach, Steven G. Adie, Cornell Univ. (United States)

[Add To My Schedule](#) 

**Altered stress granules biomechanics by ALS protein FUS revealed by background-deflection Brillouin microscopy**

Paper 10880-9


Author(s): Giuseppe Antonacci, Istituto Italiano di Tecnologia (Italy)

[Add To My Schedule](#) 

**Mechanical investigation of invadopodia using elastic resonator interference stress microscopy**

Paper 10880-10

Author(s): Eleni Dalaka, Nils M. Kronenberg, Philipp Liehm, Univ. of St. Andrews (United Kingdom); Jeffrey E. Segall, Michael B. Prystowsky, Albert Einstein College of Medicine (United States); Malte C. Gather, Univ. of St. Andrews (United Kingdom)

[Add To My Schedule](#) 

**Lunch Break 12:00 PM - 1:45 PM**

---

## Session 3: Keynote Session

---

Saturday 2 February 2019  
1:45 PM - 2:30 PM


Session Chairs: [Kirill V. Larin](#), Univ. of Houston (United States) ; [Giuliano Scarcelli](#), Univ. of Maryland, College Park (United States)

---

### How imaging is informing diagnosis and treatment of glaucoma (Keynote Presentation)

Paper 10880-11

Author(s): C. Ross Ethier, Georgia Institute of Technology (United States)

[Add To My Schedule](#) 

---

## Session 4: Computation and Modeling

---

Saturday 2 February 2019  
2:30 PM - 3:15 PM


Session Chairs: [Qifa Zhou](#), The Univ. of Southern California (United States) ; [Seok-Hyun Yun](#), Wellman Ctr. for Photomedicine (United States) ; [Peter Török](#), Imperial College London (United Kingdom)

---

### Multifactorial biomechanical stress equation for identifying the propensity of coronary plaque rupture

Paper 10880-12


Author(s): Pallavi Doradla, Kenichiro Otsuka, Abhijay Nadkarni, Martin Villiger, Wellman Ctr. for Photomedicine (United States); Antonios Karanasos, Jouke Dijkstra, Felix Zijlstra, Gijs van Soest, Joost Daemen, Evelyn Regar, Erasmus MC (Netherlands); Brett Bouma, Seemantini K. Nadkarni, Wellman Ctr. for Photomedicine (United States)

[Add To My Schedule](#) 

### An analytical model of laser-induced dynamic thermoelastic deformation of the viscoelastic half-space

Paper 10880-13


Author(s): Salavat R. Aglyamov, Univ. of Houston (United States), The Univ. of Texas at Austin (United States); Susobhan Das, Chih-Hao Liu, Univ. of Houston (United States); Shang Wang, Baylor College of Medicine (United States); Alexander Schill, Univ. of Houston (United States); Kirill V. Larin, Univ. of Houston (United States), Baylor College of Medicine (United States), National Research Tomsk State Univ. (Russian Federation)

[Add To My Schedule](#) 

### Elasticity measurement by strain-photoacoustic imaging: theoretical derivation and validation in live animals

Paper 10880-14

Author(s): Guan Xu, Yunhao Zhu, Laura Johnson, Jonathan Rubin, Univ. of Michigan (United States); Jie Yuan, Nanjing Univ. (China); Xueding Wang, Peter Higgins, Univ. of Michigan (United States)

[Add To My Schedule](#) 

---

## Session 5: Novel Methods I

---

Saturday 2 February 2019  
3:45 PM - 5:45 PM


Session Chairs: [Ruikang K. Wang](#), Univ. of Washington (United States) ; [Kishan Dholakia](#), Univ. of St. Andrews (United Kingdom) ; [Christine P. Hendon](#), Columbia Univ. (United States)

---

### Perspectives and advances in optical elastography (Invited Paper)

Paper 10880-15


Author(s): Jannick P. Rolland, Fernando Zvietcovich, Gary Ge, Kevin J. Parker, Univ. of Rochester (United States)

[Add To My Schedule](#) 

### Real-time and non-invasive quantitative phase imaging of pancreatic ductal adenocarcinoma cell mechanical properties

Paper 10880-16


Author(s): Dawn Gillies, MRC Ctr. for Regenerative Medicine, The Univ. of Edinburgh (United Kingdom); Wesam Gamal, Bangor Univ. (United Kingdom); Alan Serrels, Marta Canel, MRC Institute of Genetics & Molecular Medicine, The Univ. of Edinburgh (United Kingdom); Yvonne Reinwald, Nottingham Trent Univ. (United Kingdom); Ying Yang, Alicia El Haj, Keele Univ. (United Kingdom); Pierre O. Bagnaninchi, MRC Ctr. for Regenerative Medicine, The Univ. of Edinburgh (United Kingdom)

[Add To My Schedule](#) 

### Non-invasive determination of retinal temperature through stimulated laser speckle imaging (sLSI)

Paper 10880-17


Author(s): Sean J. Kirkpatrick, Michigan Technological Univ. (United States); Nicolle Sevilla, Ilyas Saytashev, Jessica C. Ramella-Roman, Florida International Univ. (United States)

[Add To My Schedule](#) 

### Depth-resolved micro-parallel plate rheometry using cross-correlation tracking with OCT

Paper 10880-18


Author(s): Kelsey Oeler, The Univ. of North Carolina at Chapel Hill (United States); Richard L. Blackmon, Elon Univ. (United States); David B. Hill, Amy L. Oldenburg, The Univ. of North Carolina at Chapel Hill (United States)

[Add To My Schedule](#) 

#### Phase-sensitive OCT in monitoring of slow-rate strains in laser tissue reshaping

Paper 10880-19


Author(s): Vladimir Yu. Zaitsev, Lev A. Matveev, Alexander L. Matveyev, Alexandr A. Sovetsky, Grigory V. Gelikonov, Institute of Applied Physics of the RAS (Russian Federation); Olga I. Baum, Institute of Laser and Information Technologies of the RAS (Russian Federation); Aleksand I. Omelchenko, Institute of Photonic Technologies of the RAS (Russian Federation), Institute of Applied Physics of the RAS (Russian Federation); Alexey V. Yuzhakov, Institute of Photonic Technologies of the RAS (Russian Federation), Institute of Applied Physics of the RAS (Russian Federation); Emil N. Sobol, Institute of Photonic Technologies of the RAS (Russian Federation), Institute of Applied Physics of the RAS (Russian Federation), IPG Medical Corp. (United States)

[Add To My Schedule](#) 

#### Passive elastography: from organ to cell (Invited Paper)

Paper 10880-20

Author(s): Stefan Catheline, INSERM, Univ. of Lyon (France)

[Add To My Schedule](#) 

## Posters-Saturday

Saturday 2 February 2019


5:15 PM - 6:45 PM

Conference attendees are invited to attend the BiOS poster session on Saturday 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>.

#### Shear wave speed estimation from dispersion analysis of imaged guided waves in bounded media

Paper 10880-44


Author(s): Liang Gao, Mitchell A. Kirby, Shaozhen Song, Ivan M. Pelivanov, Tueng T. Shen, Ruikang K. Wang, Matthew O'Donnell, Univ. of Washington (United States)

[Add To My Schedule](#) 

#### Investigation of impulsive stimulated Brillouin micro-elastography

Paper 10880-45


Author(s): Jürgen W. Czarske, Benedikt Krug, Nektarios Koukourakis, Jochen Guck, TU Dresden (Germany)

[Add To My Schedule](#) 

#### Elasticity detection of chicken tendon using optical coherence elastography

Paper 10880-46


Author(s): Kairui Feng, Pensen Hou, Chunhui Li, Zhihong Huang, Univ. of Dundee (United Kingdom)

[Add To My Schedule](#) 

#### The elasticity measurement of excised vessels from Thiel-embalmed cadaver

Paper 10880-47


Author(s): Kairui Feng, Chunhui Li, Zhihong Huang, Univ. of Dundee (United Kingdom)

[Add To My Schedule](#) 

#### A preliminary study on using reverberant shear wave fields in optical coherence elastography to examine mice brain ex vivo

Paper 10880-48


Author(s): Gary Ge, Fernando Zvietcovich, Jannick P. Rolland, Humberto Mestre, Michael Giannetto, Maiken Nedergaard, Kevin J. Parker, Univ. of Rochester (United States)

[Add To My Schedule](#) 

#### High-speed spectroscopic magnetomotive optical coherence elastography (MM-OCE) with microneedle-array-injected iron oxide nanoparticles

Paper 10880-49


Author(s): Pin-Chieh Huang, Rishyashring R. Iyer, Beckman Institute for Advanced Science and Technology, Univ. of Illinois (United States); Bethany J. Bogan, Georgia Southern Univ. (United States); Yuan-Zhi Liu, Beckman Institute for Advanced Science and Technology, Univ. of Illinois (United States); Stephen A. Boppart, Beckman Institute for Advanced Science and Technology, Univ. of Illinois (United States)

[Add To My Schedule](#) 

#### Lateral mechanical resolution in dynamic optical coherence elastography (OCE)

Paper 10880-50


Author(s): Mitchell A. Kirby, Univ. of Washington (United States); Kanheng Zhou, Univ. of Dundee (United Kingdom); Liang Gao, Ivan M. Pelivanov, Univ. of Washington (United States); Chunhui Li, Zhihong Huang, Univ. of Dundee (United Kingdom); Tueng T. Shen, Ruikang K. Wang, Matthew O'Donnell, Univ. of Washington (United States)

[Add To My Schedule](#) 

#### Lateral and axial displacements and microstructural decorrelation measurement for compression-based optical coherence elastography

Paper 10880-51


Author(s): En Li, Shuichi Makita, Arata Miyazawa, Shinnosuke Azuma, Yoshiaki Yasuno, Univ. of Tsukuba (Japan)

[Add To My Schedule](#) 

**Mechanical evaluation of corneal ulcer healing process using optical coherence elastography: an in-vitro study**


Paper 10880-52

Author(s): Yuting Ling, Chunhui Li, Univ. of Dundee (United Kingdom); Christine Purslow, Thea Pharmaceuticals Ltd. (United Kingdom); Ying Yang, Keele Univ. (United Kingdom); Zhihong Huang, Univ. of Dundee (United Kingdom)

[Add To My Schedule](#) **Adaptive Doppler analysis for robust handheld optical coherence elastography**


Paper 10880-53

Author(s): Xuan Liu, Farzana Zaki, Haokun Wu, Yahui Wang, Chizhong Wang, New Jersey Institute of Technology (United States)

[Add To My Schedule](#) **OCE quantification of Poisson's ratio through 2D speckle tracking**


Paper 10880-54

Author(s): Xuan Liu, Farzana Zaki, Harshita Garg, Jonathan Rodriguez, New Jersey Institute of Technology (United States)

[Add To My Schedule](#) **Simultaneous displacement estimation and reconstruction for spectral domain optical coherence elastography**


Paper 10880-55

Author(s): Jonathan H. Mason, MRC Ctr. for Regenerative Medicine, The Univ. of Edinburgh (United Kingdom); Yvonne Reinwald, Nottingham Trent Univ. (United Kingdom); Ying Yang, Institute for Science &amp; Technology in Medicine, Keele Univ. (United Kingdom); Sarah Waters, Univ. of Oxford (United Kingdom); Alicia El Haj, Institute for Science &amp; Technology in Medicine, Keele Univ. (United Kingdom); Pierre O. Bagnaninchi, MRC Ctr. for Regenerative Medicine, The Univ. of Edinburgh (United Kingdom), Edinburgh Cancer Research UK Ctr., The Univ. of Edinburgh (United Kingdom)

[Add To My Schedule](#) **Compressed sensing OCT for real-time collagen fiber orientation quantification and analysis**


Paper 10880-56

Author(s): James P. McLean, Yuye Ling, Christine P. Hendon, Columbia Univ (United States)

[Add To My Schedule](#) **SNR enhancement in Brillouin microspectroscopy using spectrum reconstruction**


Paper 10880-57

Author(s): Yuchen Xiang, Imperial College London (United Kingdom); Peter Török, Imperial College London (United Kingdom), Nanyang Technological Univ. (Singapore); Matthew Foreman, Chengze Song, Imperial College London (United Kingdom)

[Add To My Schedule](#) **The simulation of phantom mechanical properties for optical coherence elastography (OCE) detection**


Paper 10880-58

Author(s): Jinjiang Wang, Tianjin Univ. (China)

[Add To My Schedule](#) **Assessing the effects of storage medium and temperature on the biomechanical properties of porcine lens with optical coherence elastography**


Paper 10880-59

Author(s): Hongqiu Zhang, Salavat R. Aglyamov, Kirill V. Larin, Univ. of Houston (United States)

[Add To My Schedule](#) **Quantifying lens elastic properties with optical coherence elastography as a function of intraocular pressure**


Paper 10880-60

Author(s): Hongqiu Zhang, Kirill V. Larin, Salavat R. Aglyamov, Chen Wu, Univ. of Houston (United States)

[Add To My Schedule](#) **Tissue elasticity investigation using intravascular optical coherence elastography**

Paper 10880-61

Author(s): Tianshi Wang, Erasmus MC (Netherlands); Tom Pfeiffer, Institut für Biomedizinische Optik, Univ. zu Lübeck (Germany); Ali Akyildiz, Erasmus MC (Netherlands); Wolfgang Wieser, Optores GmbH (Germany); Heleen van Beusekom, Geert Springeling, Frits Mastik, Antonius Franciscus Wilhelmus van der Steen, Erasmus MC (Netherlands); Robert Huber, Institut für Biomedizinische Optik, Univ. zu Lübeck (Germany); Gijs van Soest, Erasmus MC (Netherlands)

[Add To My Schedule](#) 

---

**BIOS Hot Topics**

---

Saturday 2 February 2019

7:00 PM - 9:00 PM

---

**SUNDAY 3 FEBRUARY**[Show All Abstracts](#)

---

**Session 6:  
Optical Coherence Elastography II**

---

Sunday 3 February 2019


8:30 AM - 10:00 AM

Session Chairs: [Matthew O'Donnell](#), Univ. of Washington (United States) ; [Davide Iannuzzi](#), Vrije Univ. Amsterdam (Netherlands) ; Vladimir Yu. Zaitsev, Russian Academy of Science Nizhny Novgorod (Russian Federation)

**Imaging of anterior segment pathologies: challenges and future opportunities** (*Invited Paper*)


Paper 10880-21

Author(s): Karol Karnowski, Institute of Physical Chemistry of the Polish Academy of Sciences (Poland)

[Add To My Schedule](#) **Manual compression for hand-held 3D quantitative micro-elastography of human breast tissue**


Paper 10880-22

Author(s): James Anstie, Brooke Krajancich, Lixin Chin, Luke Frewer, Qi Fang, Philip Wijesinghe, Andrea Curatolo, Brendan Kennedy, Harry Perkins Institute of Medical Research (Australia), The Univ. of Western Australia (Australia)

[Add To My Schedule](#) **A framework for analyzing resolution in optical coherence elastography**


Paper 10880-23

Author(s): Matt Hepburn, Philip Wijesinghe, Lixin Chin, Brendan F. Kennedy, Harry Perkins Institute of Medical Research (Australia), The Univ. of Western Australia (Australia)

[Add To My Schedule](#) **Differentiation of murine colon pathology by optical and mechanical contrast using optical coherence tomography and elastography**


Paper 10880-24

Author(s): Achuth Nair, Susobhan Das, Chih-Hao Liu, Manmohan Singh, Triet Le, Salavat R. Aglyamov, Yong Du, Sanam Soomro, Chandra Mohan, Kirill V. Larin, Univ. of Houston (United States)

[Add To My Schedule](#) **Real-time viscosity-based monitoring of blood coagulation by optical coherence elastography**

Paper 10880-25

Author(s): Junxiao Yu, Jiang Zhu, Beckman Laser Institute and Medical Clinic (United States); Xiangqun Xu, Zhejiang Sci-Tech Univ. (China); Zhongping Chen, Beckman Laser Institute and Medical Clinic (United States)

[Add To My Schedule](#) 

---

**Session 7:  
Novel Methods II**

---


Sunday 3 February 2019

10:30 AM - 12:00 PM

Session Chairs: [Matthew O'Donnell](#), Univ. of Washington (United States) ; [Davide Iannuzzi](#), Vrije Univ. Amsterdam (Netherlands) ; Vladimir Yu. Zaitsev, Russian Academy of Science Nizhny Novgorod (Russian Federation)**The application of interferometric imaging in quantitative mechanobiology** (*Invited Paper*)


Paper 10880-26

Author(s): Peter T. C. So, Massachusetts Institute of Technology (United States)

[Add To My Schedule](#) **Absolute three-dimensional measurement of refractive index via dual Brillouin spectroscopy**


Paper 10880-27

Author(s): Antonio Fiore, Giuliano Scarcelli, Univ. of Maryland, College Park (United States)

[Add To My Schedule](#) **High resolution wide field stiffness heterogeneity mapping in pancreatic cancer**

Paper 10880-28

Author(s): Phuong Vincent, Kayla Marra, Jason Gunn, Jack Hoopes, Thayer School of Engineering at Dartmouth (United States); Marvin Doyley, Univ. of Rochester (United States); Tayyaba Hasan, Wellman Ctr. for Photomedicine (United States), Massachusetts General Hospital (United States); Brian Pogue, Thayer School of Engineering at Dartmouth (United States)

[Add To My Schedule](#) **Laser speckle micro-rheology for studying cancer mechanobiology with resolution enhancement**


Paper 10880-29

Author(s): Zeinab Hajjarian Kashany, Seemantini K. Nadkarni, Harvard Medical School (United States)

[Add To My Schedule](#) **Evaluation of tissue elasticity using spectral characteristics of AuT generated mechanical waves**

Paper 10880-30

Author(s): Liang Gao, Mitchell A. Kirby, Shaozhen Song, Ivan M. Pelivanov, Tueng T. Shen, Ruikang K. Wang, Matthew O'Donnell, Univ. of Washington (United States)

[Add To My Schedule](#) 

---

**Lunch Break 12:00 PM - 1:30 PM**

---

---

**Session 8:  
Biomechanics of the Eye**

---

Sunday 3 February 2019  
1:30 PM - 3:15 PM


Session Chair: [Vladislav V. Yakovlev](#), Texas A&M Univ. (United States)

---

**The importance of corneal biomechanics in clinical practice** *(Invited Paper)*

Paper 10880-31


Author(s): J. Bradley Randleman, USC Roski Eye Institute (United States)

[Add To My Schedule](#) 

**In vivo measurements of normal, keratoconic, and post crosslinked keratoconic human cornea with optical coherence elastography**

Paper 10880-32


Author(s): Matthew R. Ford, Cole Eye Institute, Cleveland Clinic (United States); Vinicius S. DeStefano, Univ. Federal de São Paulo (Brazil); Ibrahim Seven, Cole Eye Institute, Cleveland Clinic (United States); William J. Dupps, Cole Eye Institute, Cleveland Clinic (United States)

[Add To My Schedule](#) 

**SS-OCT based ocular biometry and rheological mechanical model for comprehensive analysis of the eye reaction to air-puff stimulus**

Paper 10880-33

Author(s): Alfonso Jiménez Villar, Nicolaus Copernicus Univ. (Poland); Mohammad Jannesari, Mahmoud Kadkhodaei, Peiman Mosaddegh, Isfahan Univ. of Technology (Iran, Islamic Republic of); Sławomir Grulkowski, Gdansk Univ. of Technology (Poland); Bartłomiej Kaluzny, Nicolaus Copernicus Univ. (Poland); Maciej Wojtkowski, Polish Academy of Sciences (Poland), Nicolaus Copernicus Univ. (Poland); Henryk Kasprzak, Wrocław Univ. of Science and Technology (Poland); Ireneusz Grulkowski, Nicolaus Copernicus Univ. (Poland)

[Add To My Schedule](#) 

**A speckle interferometric technique for the evaluation of corneal biomechanics under physiological pressure variations**

Paper 10880-34

Author(s): Abby Wilson, Univ. of Cambridge (United Kingdom), Cancer Research UK Cambridge Institute (United Kingdom); John Marshall, Univ. College London (United Kingdom)

[Add To My Schedule](#) 

**Temporal changes in corneal elasticity and shape during UV collagen cross-linking**

Paper 10880-35


Author(s): Mitchell A. Kirby, Ryan T. Wallace, Liang Gao, Shaozhen Song, Ivan M. Pelivanov, Ruikang K. Wang, Matthew O'Donnell, Tueng T. Shen, Univ. of Washington (United States)

[Add To My Schedule](#) 

**High frequency traveling wave elastography of the cornea and sclera using a vibrating piezoelectric probe**

Paper 10880-36

Author(s): Antoine Ramier, Harvard-MIT Health Sciences and Technology (United States), Wellman Ctr. for Photomedicine, Massachusetts General Hospital (United States); Behrouz Tavakol, Wellman Ctr. for Photomedicine, Massachusetts General Hospital (United States); Seok-Hyun Yun, Wellman Ctr. for Photomedicine, Massachusetts General Hospital (United States), Harvard-MIT Health Sciences and Technology (United States)

[Add To My Schedule](#) 

---

## Session 9: Brillouin Elastography

---

Sunday 3 February 2019  
3:45 PM - 5:45 PM

Session Chairs: [Zhongping Chen](#), Beckman Laser Institute and Medical Clinic (United States) ; Brendan F. Kennedy, The Univ. of Western Australia (Australia) ; [Amy L. Oldenburg](#), The Univ. of North Carolina at Chapel Hill (United States)

---

**Brillouin spectroscopy is insensitive to stiffness after correcting for the influence of water content in hydrogels** *(Invited Paper)*

Paper 10880-37


Author(s): Darryl R. Overby, Pei-Jung Wu, Imperial College London (United Kingdom); Irina V. Kabakova, Univ. of Technology, Sydney (Australia); Jeffrey W. Ruberti, Northeastern Univ. (United States); Joseph M. Sherwood, Iain E. Dunlop, Carl Paterson, Imperial College London (United Kingdom); Peter Török, Nanyang Technological Univ. (Singapore)

[Add To My Schedule](#) 

**Brillouin microscopy: exploring niche applications**

Paper 10880-38

Author(s): Vladislav V. Yakovlev, Texas A&M Univ. (United States)

[Add To My Schedule](#) 

**Non-contact quantification of tissue biomechanics during embryo development with Brillouin microscopy and optical coherence tomography**

Paper 10880-39


Author(s): Jitao Zhang, Univ. of Maryland, College Park (United States); Raksha Raghunathan, Justin Rippey, Chen Wu, Univ. of Houston (United States); Richard H. Finnell, Baylor College of Medicine (United States); Kirill V. Larin, Univ. of Houston (United States); Giuliano Scarcelli, Univ. of Maryland, College Park (United States)

[Add To My Schedule](#) 

**Variations on Brillouin microspectroscopy for measuring mechanical anisotropy and signal enhancement**

Paper 10880-40


Author(s): Kareem Elsayad, Vienna Biocenter Core Facilities GmbH (VBCF) (Austria)

[Add To My Schedule](#) 

**Sequentially-Shifted Excitation (SSE) Brillouin spectroscopy for recovering signal contaminated with strong scattering, absorption or fluorescence.**

Paper 10880-41


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

[Add To My Schedule](#) 

**Adaptive optics for Brillouin micro-spectroscopy**

Paper 10880-42


Author(s): Eitan Edrei, Giuliano Scarcelli, Univ. of Maryland, College Park (United States)

[Add To My Schedule](#) 

**Mapping mechanical properties and structure of dentin by Brillouin spectroscopy and nonlinear optical microscopy**

Paper 10880-43

Author(s): Tijana Lainović, Univ. of Novi Sad (Serbia); Jérémie Margueritat, Institut Lumière Matière, Univ. Claude Bernard Lyon 1, CNRS (France); Larisa Blažić, Univ. of Novi Sad (Serbia); Dejan Pantelić, Mihailo Rabasović, Aleksandar Krmpot, Univ. of Belgrade (Serbia); Thomas Dehoux, Univ. Claude Bernard Lyon 1 (France)

[Add To My Schedule](#) 

---

## Chairs' Final Remarks

---

Sunday 3 February 2019

5:45 PM - 5:50 PM

*Conference Chairs:* **Kirill V. Larin**, Univ. of Houston (United States); **Giuliano Scarcelli**, Univ. of Maryland, College Park (United States)

---