

ITEC 2026 PROGRAM



Wednesday, September 23rd, 2026

07:30-08:10 Registration

08:10-08:20 Welcome

08:20-09:00 **Memorial Lecture in Honor of Professor Kevin J. Parker**

Marvin Doyley - University of Rochester, USA & Jeff Bamber - ICR – London, UK

09:00-10:00 **Session 1: Ultrasound Methods I**

09:00-09:15 **T1** A Feasibility Study of 4-D Pulse Wave Imaging Using a Row-Column-Addressed Array

Haokang Shi - Columbia University, USA

09:15-09:30 **T2** Cardiac Natural Mechanical Waves Trajectories as a Marker of Tissue Pathological State

Corentin Alix - Centre de Résonance Magnétique des Systèmes Biologiques, France

09:30-09:45 **T3** Cardiac Shear Wave Elastography: Echocardiography Parameters Influencing Shear Wave Speed Propagation after Mitral and Aortic Valve Closure

Andressa Araujo Andrade Sousa - KU Leuven, Belgium

09:45-10:00 **T4** Ultrasonic Cavitation-induced Shear Wave Elastography

Clément Follounoux - LabTAU, France

10:00-10:30 **Morning Coffee Break**

10:30-11:30 **Session 2: Magnetic Resonance Methods I**

10:30-10:45 **T5** Cardiac-Resolved MRE Reveals Cerebral Stiffness Pulsation

Merijn Calis - University Hospital Ghent and Ghent University, Belgium

10:45-11:00 **T6** Effects of SNR and Tissue Displacement Amplitude on Cardiac MRE Stiffness Mapping

Julia Martemyanova - Oslo University Hospital and University of Oslo, Norway

11:00-11:15 **T7** Evidence for the Ultra-soft Brain Provided by Uniqueness in Intrinsic MR Elastography

Marius Burman Ingeberg - UMC Utrecht, Netherlands

11:15-11:30 **T8** Feasibility of in vivo Human Kidney Multifrequency DTI-MRE

Dieter Klatt - UIC, BME, USA

11:30-12:30 **Session 3: Optical Methods I**

11:30-11:45 **T9** Air-Jet Based Optical Coherence Elastography Towards in-situ Brain tumor Delineation and Fundamental Tissue Mechanical Research

Nicolas Detrez - Medical Laser Center Lübeck, Germany

11:45-12:00 **T10** Heartbeat Optical Coherence Elastography for Assessment of Corneal Biomechanics

Salavat Aglyamov - University of Houston, USA

12:00-12:15 **T11** High Frequency Optical Micro-elastography to Image the Temporal Impact of Inflammatory Phenotypes on Macrophage Mechanics

Hari S. Nair - University of Montreal Hospital Research Center and University of Montreal, Canada

12:15-12:30 **T12** Intracellular Mechanophenotyping of Macrophages: Cytoskeletal Contributions and Senescence-associated Changes Revealed by Optical Microelastography

Sajad Ghazavi - University of Montreal Hospital Research Center and University of Montreal, Canada

12:30-13:30 **Lunch Break**

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- 13:30-14:15 Plenary Talk - The role of mechanics in brain development and disorder**
Kristian Franze - University of Erlangen, Germany
- 14:15-15:15 Session 4: Forward and Inverse Problems I**
- 14:15-14:30 T13 Cross-modality Multifrequency Neural Network-based Wave Inversion**
Héloïse Bustin - Deutsches Herzzentrum der Charité and Charité - Universitätsmedizin Berlin, Germany
- 14:30-14:45 T14 Elastography of Prestressed, Heterogeneous and Anisotropic Viscoelastic Materials: Inverse Modeling Challenges and Strategies**
Thomas J. Royston - University of Illinois Chicago, USA
- 14:45-15:00 T15 Hybrid Convolution-Based Method for Inverting the Helmholtz Equation**
Patricio González - Federico Santa Maria Technical University, Chile
- 15:00-15:15 T16 Viscoelastic Inversions from Multifrequency Shear Wave Data**
Paul E. Barbone - Boston University, USA
- 15:15-16:30 Afternoon Coffee Break + Poster session**
- 16:30-17:15 Session 5: Instrumentation**
- 16:30-16:45 T17 Directional Clutter Filter Wave Imaging in Time Harmonic Elastography**
Mahsa Sotoodeh Zikar - University of Oslo, Norway
- 16:45-17:00 T19 Radial Energy-Quantile (REQ) Estimator for Robust Wavenumber Mapping across Directional and Diffuse Wavefields**
Sara Gomez-Ramirez - University of Rochester, USA
- 17:00-17:15 T20 Uncertainty Evaluation in Shear Wave Speed Measurements using ARFI Ultrasound Elastography**
Andre Victor Alvarenga - National Physical Laboratory, UK
- 18:00-21:00 Welcome Reception at the Botanical Garden Leipzig** with acoustic presentation from Jörg Wilkendorf (former guitarist of Rio Reiser, Gundermann...) (Linnéstraße 1, 04103 Leipzig - 15 min walk)

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Thursday, September 24th, 2026

07:50-08:00 Announcements for Day 2

08:00-08:40 **Keynote Talk 1 - Shear Wave Elasticity Imaging: Opportunities and Challenges in Skeletal Muscle Characterization**

Kathryn Nightingale - Duke University, USA

08:40-09:00 **Impulse Talk - Can Biomechanics Detect Emergent Properties of Tumor Progression?**

Josef Käs - Leipzig University, Germany

09:00-10:00 **Session 6: Tissue Properties and Models I**

09:00-09:15 **T21** Flexural Pulse Wave velocity to Unveil Arterial Wall Elasticity

Shiva Ahsani - LabTAU, France

09:15-09:30 **T22** Assessing Pressure-Induced Stiffness and Volume Changes in Ex Vivo Kidney with Ultrasound and MRI

Ariana Cihan - Ghent University, Belgium

09:30-09:45 **T23** Blood Flow Restriction and Its Immediate Biomechanical Effects on Vastus Lateralis Muscle Assessed by Ultrasound Time-Harmonic Elastography

Hossein S. Aghamiry - Charité - Universitätsmedizin Berlin, Germany

09:45-10:00 **T24** Feasibility of Characterizing in vivo Skeletal Muscle as an Elastic ITI Medium Using High-Resolution Phase Velocity Estimation Algorithms in Arbitrarily Sampled Wavefields

Wren E. Wightman - Duke University, USA

10:00-10:30 **Morning Coffee Break**

10:30-11:15 **Session 7: Numerical Simulations**

10:30-10:45 **T25** Integrating in vitro and in silico Approaches for Natural Shear Wave Elastography in the Left Ventricle to Model Valve Closure

Andrea Resca Cacciari - Ghent University, Belgium

10:45-11:00 **T26** Modelling MR Elastography to Assess the Impact of Microstructural Variation on Brain Tissue Mechanics

Sarah Vandenbulcke - KTH Royal Institute of Technology, Sweden

11:00-11:15 **T27** Viscoelastic EXplicit Elastography (VEXEL): Shear Wave Simulation Platform for Fractional Models

José Cortés - University of Granada, Spain

11:15-12:30 **Session 8: Clinical, Animal & Miscellaneous**

11:15-11:30 **T28** Ultrasound Elastography for the Assessment of Aortic Stiffness: Preliminary Findings

Carolina Dominguez Aleixo - Charité - Universitätsmedizin Berlin, Germany

11:30-11:45 **T29** Towards Intravascular Elasticity Measurements via a Catheter with Asynchronous Optical Coherence Elastography

Ginger Schmidt - Harvard Medical School and Massachusetts General Hospital and Massachusetts Institute of Technology, USA

11:45-12:00 **T30** Wide-field Quantitative micro-Elastography for the Study of Human Prostate Tissue

Szymon Tamborski - Nicolaus Copernicus University, Poland

12:00-12:15 **T31** A Phase-based Volumetric Elastography Approach for Ultrasound and MR

Enrique González-Mateo - CSIC - Universitat Politècnica de València, Spain

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- 12:15-12:30 **T32** An Innovative Magnetic Resonance Elastography Setup to Characterize Klf10-dependent Skeletal Muscle Alterations in a Novel Murine Model
Aude Loumeaud - University of Strasbourg and Université de technologie de Compiègne, France
- 12:30-13:30** **Lunch Break**
- 13:30-14:30** **Session 9: Magnetic Resonance Methods II**
- 13:30-13:45 **T33** Optimal Control MR Elastography in a Murine Model of Hepatic Iron Overload: Preliminary Results
Tiffany Bakir Ageron - INSA Lyon, Université Lyon, France
- 13:45-14:00 **T34** Seeing Prestress Distribution through MR Elastography
Yuan Feng - Shanghai Jiao Tong University, China
- 14:00-14:15 **T35** MR-Elastography for Patients with Pseudocirrhosis - a Pilot Comparison with Healthy Volunteers
Owen White - The Royal Marsden NHS Foundation Trust and The Institute of Cancer Research, UK
- 14:15-14:30 **T36** Self-gating with Compressed Sensing Enables Free-breathing, ECG-free, Time-efficient Cardiac MR Elastography in Rats
Kasper Klausen - Oslo University Hospital and University of Oslo, Norway
- 14:30-15:30** **Afternoon Coffee Break + Poster session**
- 15:30-16:30** **Session 10: Optical Methods II**
- 15:30-15:45 **T37** Mechanical Phenotyping of Triple Negative Breast Cancer using Brillouin Microscopy and a Microtester Compression Technique
Irina Kabakova - UTS Sydney, Australia
- 15:45-16:00 **T38** Mechanical Characterization of Endometrial Patients-Derived Tumor Organoids Using Optical micro-Elastography
Malaury Devissi - LabTAU, France
- 16:00-16:15 **T39** Optical Scanning Tomography Elastography: First Experiences with a Novel Elastography Method
Elijah Van Houten - Université de Strasbourg, France
- 16:15-16:30 **T40** Quantifying Corneal Biomechanical Alterations in Primate Models of Glaucoma and Form-Deprivation Myopia Using Optical Coherence Elastography
Kirill Larin - University of Houston, USA
- 16:30-17:30** **Session 11: Ultrasound Methods II**
- 16:30-16:45 **T41** HIFU-based Elasticity Mapping for Prostate Ablation Treatment
Gerald Lee - University of Washington, USA
- 16:45-17:00 **T42** In vivo Quantification of Tensile Elasticity and Anisotropy of Human Peripheral Nerves using Angle-resolved Ultrasound Shear Wave Elastography
Ricardo J. Andrade - Nantes Université, France
- 17:00-17:15 **T43** Multiparametric Ultrasound Time-Harmonic Elastography for Characterization of Focal Liver Lesions
Tom Meyer - Charité - Universitätsmedizin Berlin, Germany
- 17:15-17:30 **T44** Non-Invasive Electromechanical Wave Velocity Mapping for Functional Substrate Characterization in Ischemic and Non-Ischemic Cardiomyopathy
Cagla Ozsoy - Columbia University Irving Medical Center, USA
- 18:30-21:30** **Networking Dinner at Eisengießerei Westwerk** (Karl-Heine-Straße 93b, 04229 Leipzig with Jazz music by the Acoustic Image Quartett - bus transfer)

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Friday, September 25th, 2026

08:00-08:10 Announcements for Day 3

08:10-08:50 **Keynote Talk 2 - MR Elastography of the Poro-Viscoelastic Brain**

Elijah Van Houten - University of Strasbourg, Strasbourg, France

08:50-09:10 **Industrial Talk - T.H.E.A. devices**

09:10-10:10 **Session 12: Optical Methods III**

09:10-09:25 **T45** Recent Advances in High-speed Volumetric Optical Coherence Elastography: Full-field and Point-scanning Techniques

Brendan F. Kennedy - University of Western Australia, Australia

09:25-09:40 **T46** Resolving the Mechanics of the Tumor Boundary Using Optical Multifrequency Elastography in Colorectal Liver Metastasis

Jakob Jordan - Charité - Universitätsmedizin Berlin, Germany

09:40-09:55 **T47** Solid Stress is a Marker of the Non-proliferative Cirrhotic Liver Disease

Yasmine Safraoui - University of Pennsylvania, USA

09:55-10:10 **T48** Reconstruction of All Three Elastic Moduli in Skin from Phase Velocities of Rayleigh Waves: Data Processing and Optimization Algorithms

Ivan (Vanya) Pelivanov - University of Washington, Seattle, USA

10:10-10:40 **Morning Coffee Break**

10:40-11:40 **Session 13: Ultrasound Methods III**

10:40-10:55 **T49** Regime-Dependent Optimization of Shear Wave Generation in Harmonic Elastography

Gilmer A. Flores Barrera - University of Rochester, USA

10:55-11:10 **T50** Shear Wave Elastography for Quantifying the Mechanical Response of the Respiratory Muscles to Functional Electrical Stimulation

Arthur Begoc - Université Paris-Saclay and Sorbonne Université, France

11:10-11:25 **T51** Reliability Assessment of Vibration-based Shear Wave Elastography Using Signal Energy

Saramu Abe - Institute of Science Tokyo, Japan

11:25-11:40 **T52** Two-Point Model-Free Estimation of Shear Wave Attenuation in Ultrasound Elastography

Piotr Kijanka - AGH University of Krakow, Poland

11:40-12:40 **Lunch Break**

12:40-13:20 **Keynote Talk 3 - Compression-Based Optical Coherence Elastography: Applications in Cancer Imaging**

Brendan Kennedy - University of Western Australia, Australia

13:20-14:20 **Session 14: Magnetic Resonance Methods III**

13:20-13:35 **T53** Single-Breathhold 3D MR Elastography in the Liver, with Simultaneous R2* and PDFF Mapping

Anne-Sophie van Schelt - King's College London, UK

13:35-13:50 **T54** Spatially Resolved Compact Tabletop Magnetic Resonance Elastography for Mapping Biomechanical Heterogeneity

Weijie Zhao - Charité - Universitätsmedizin Berlin, Germany

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- 13:50-14:05 **T55** The Prognostic Characterization of Breast Cancer Tissue Biomechanics with Magnetic Resonance Elastography
Nicole Bens - Mayo Clinic, USA
- 14:05-14:20 **T56** Sensitivity of Multifrequency Brain MRE to Acute Caffeine Intake
Simon Murk - University Hospital and University Erlangen-Nürnberg, Germany
- 14:20-15:00** *Afternoon Coffee Break*
- 15:00-16:00** **Session 15: Tissue Properties and Models II**
- 15:00-15:15 **T57** Analytical Investigation of Pressure-Stiffness Uncoupling during Shear Wave Elastography of Interstitially Pressurized Organs
Ariana Cihan - Ghent University, Belgium
- 15:15-15:30 **T58** Shear Excitation Differentially Modulates 3D Tumour Spheroids
Inas Faris - University of Granada and Instituto de Investigación Biosanitaria, Spain
- 15:30-15:45 **T59** Ultrasound Micro Time-Harmonic Elastography for In Vivo Viscoelasticity Mapping in Preclinical Research
Mareike Wolff - Charité - Universitätsmedizin Berlin, Germany
- 15:45-16:00 **T60** Longitudinal Shear Wave Elastography Monitors Response to Combined Radiation and Immunotherapy in a Murine Model of Pancreatic Ductal Adenocarcinoma
Marvin Doyley - University of Rochester, USA
- 16:00-16:45** **Student Awards, Introduction of ITEC 2027, and Closing Ceremony**
- 16:45 End of Conference

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Posters

Poster session I - Wednesday, September 23rd, 2026, 15:15-16:30

Poster session II - Thursday, September 24rd, 2026, 14:30-15:30

- P1** Cardiac time harmonic elastography: validation against invasive left ventricular pressure in patients
Tom Meyer - Charité - Universitätsmedizin Berlin, Germany
- P2** Effect of Transmit Voltage and Vibration Amplitude on Shear Wave Speed Estimates in Phase-Gradient Elastography
Mitra Gupta - University of Glasgow, UK
- P3** Median Nerve Stiffness Assessment in Carpal Tunnel Syndrome Using Time-Harmonic Elastography: a pilot study
Pondorf Nora - Martin-Luther-University Halle-Wittenberg, Germany
- P4** Sensitivity of Ultrasound Time-Harmonic Elastography to Mechanical Changes in the Multifidus Muscle
Aghamiry Hossein - Charité - Universitätsmedizin Berlin, Germany
- P5** Toward a Renal Digital Twin: Dispersion-Based 3D Elastography for Early CKD Detection
Amresh Tiwari - Indian Institute of Technology Madras, India
- P6** High-Efficiency Quasi-Static Displacement Estimation in B-mode Ultrasound via Structured Deep Learning
Mura Joaquin - Federico Santa María Technical University, Chile
- P7** Momentum equation-based regularization and image registration for two-dimensional ultrasound elasticity imaging
Olalekan Babaniyi - Rochester Institute of Technology, USA
- P8** Reduction of shear wave phase errors using a single-block scan sequence in continuous shear wave elastography
Shunichiro Tanigawa - GE HealthCare, Japan,
- P9** The Impact of Acoustic Push Duration on Shear Wave Signal Quality
Fatemeh Mashayekhi - KU Leuven, Belgium
- P10** Mechanical properties of textiles investigated through wave propagation
Jiayuan Zhu - LabTAU, France
- P11** Viscoelastic characterization of polyacrylamide microbeads: cross-method comparison of atomic force microscopy and optical microelastography
Sajad Ghazavi - University of Montreal Hospital Research Center and University of Montreal, Canada
- P12** Evaluating Age Related Biomechanical Changes in the Psoas Major Following Spinal Manipulative Therapy Using Magnetic Resonance Elastography
Jonas Schmidt - Silkeborg Regional Hospital, Denmark
- P13** Genetic Correlates of Brain Mechanical Properties
Isa Rietveld - Kavli Institute of Systems Neuroscience, NTNU, Norway
- P14** Repeatability and reproducibility of 2D and 3D MRE at 1.5T and 3T in the liver of healthy volunteers
Owen White - The Royal Marsden NHS Foundation Trust and The Institute of Cancer Research, UK

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- P15** Thyroid MR Elastography for Small-Organ Viscoelastic Assessment
Jakob Schattenfroh - Charité - Universitätsmedizin Berlin, Germany
- P16** Longitudinal tabletop magnetic resonance elastography in a bioreactor for monitoring tissue mechanics
Meryhan M. Sallam - Charité - Universitätsmedizin Berlin, Germany
- P17** Inter-scanner reproducibility of multifrequency brain MRE
Simon Murk - Uniklinik Erlangen, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany
- P18** Applications of Atomic Force Microscopy in Cardiac Micromechanics
Jing Zeng - Charité - Universitätsmedizin Berlin, Germany
- P19** LABOU: Iterative Laplace-Based Bi-Level Optimization Phase Unwrapping for MR Elastography
Michael Fedders - Charité - Universitätsmedizin Berlin, Germany
- P20** Improved Full-Waveform Inversion in Time-Harmonic Elastography
Mohamed Aziz Boukraa - University of Oslo, Norway
- P21** Physics-Informed Deep Learning for Rapid MR Elastography
Stefan Martin – Physikalisch-Technische Bundesanstalt (PTB), Berlin, Germany
- P22** System Identification for Magnetic Resonance Elastography
Hampus Moller - KTH Royal Institute of Technology, Sweden
- P23** Open-Source FEM Framework - MRE Phantom Simulations
Henrik Palme - KTH Royal Institute of Technology, Sweden
- P24** Viscoelastic tissue characterization using shear-wave focal spot imaging: numerical experiments
Goulven Le Moign - ISTERre, CNRS, Univ. Grenoble Alpes, France
- P25** Histology-inspired reconstruction and analysis of microscopic tissue structure using sonography: SonoHisto
Heiko Tzschätzsch - Charité - Universitätsmedizin Berlin, Germany
- P26** Bubble dynamics in soft matter driven by Bjerknes forces generate shear waves
Antoine Penneron - Institute of Physics (IFP), Soft Matter, Germany
- P27** Experimental Detection of Tumor-Like Inclusions in Soft Tissue Using Torsional Wave Elastography
Yousef Almashakbeh - The Hashemite University, Jordan
- P28** Transverse Oscillation based Displacement Estimation in Ultrasound Time Harmonic Elastography
Chaoran Han - University of Oslo, Norway

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Session chairs

September 23rd, 2026

08:10-08:20	Welcome
08:20-09:00	Memorial Lecture
09:00-10:00	Session 1: Ultrasound Methods I
10:30-11:30	Session 2: Magnetic Resonance Methods I
11:30-12:30	Session 3: Optical Methods I
13:30-14:15	Plenary Talk
14:15-15:15	Session 4: Forward and Inverse Problems I
16:30-17:30	Session 5: Instrumentation

September 24th, 2026

08:00-08:40	Keynote Talk 1
08:40-09:00	Impulse Talk
09:00-10:00	Session 6: Tissue Properties and Models I
10:30-11:15	Session 7: Numerical Simulations
11:15-12:30	Session 8: Clinical, Animal & Miscellaneous
13:30-14:30	Session 9: Magnetic Resonance Methods II
15:30-16:30	Session 10: Optical Methods II
16:30-17:30	Session 11: Ultrasound Methods II

September 25th, 2026

08:10-08:50	Keynote Talk 2
08:50-09:10	Industrial Talk - T.H.E.A. devices
09:10-10:10	Session 12: Optical Methods III
10:40-11:40	Session 13: Ultrasound Methods III
12:40-13:20	Keynote Talk 3
13:20-14:20	Session 14: Magnetic Resonance Methods III
15:00-16:00	Session 15: Tissue Properties and Models II
16:00-16:45	Student Awards, Introduction of ITEC 2027, and Closing Ceremony
16:45	End of Conference

Chairs

Ingolf Sack, Melanie Estrella

Stefan Catheline, Ariana Cihan

Elijah Van Houten, Ingolf Sack

Kirill Larin, Ginger Schmidt

Ingolf Sack

Jean-Luc Gennisson, Heiko Tzschätzsch

Bruno Giammarinaro, Julia Martemyanova

Stefan Catheline

Ivan Pelivanov

Jorge Torres, Inas Faris

Paul Barbone, Joaquine Mura

Guy Cloutier, Frank Sauer

Tobias Navarro Schröder, Anne-Sophie van Schelt

Brendan Kennedy, Salavat Aglyamov

Kathy Nightingale, Tom Meyer

Simon Chatelin

Ivan Pelivanov

Tom Royston, Jakob Jordan

Yasmine Safrdou, Hossein Aghamiry

Jeff Bamber

Heloise Bustin, Dieter Klatt

Tom Royston, Anja Heeren-Hagemann

Jeff Bamber

Ingolf Sack, Stefan Catheline