41st Southern Biomedical Engineering Conference 2025
The University of Texas at Tyler, Tyler, TX

Friday Sessions

Topics Friday **Morning Session**	**Session 1:** Biomechanics I **Session Chair**: Peter Smith, PhD, *Limbitless Solutions* **Co-Chair:** Denis DiAngelo, PhD, *University of Tennessee Health Science Center*	**Session 2** Nanomedicine and Drug Delivery I **Session Chair**: Arunkumar Pitchaimani, PhD, *Vellore Institute of Technology, India* **Co-Chair:** Neethu KS, PhD., *Avinashilingam Institute for Home Sciences and Higher Education for Women Coimbatore Tamilnadu India.*	**Session 3** Medical Imaging **Session Chair**: David Gordy, PhD., *University of Mississippi Medical Center* **Co-Chair:** Judy Gordy, PhD., *University of Mississippi Medical Center*
8:30	Structural and Interface Characterization of Biodegradable Lattices for Spinal Fusion Applications *Evan Dong[1], Al Ogden[2], Giovanni Solitro[3]* *Caddo Magnet High School, Shreveport, LA, [2]Lousiana State University, Shreveport, LA, [3]Louisana State University Health Science, Shreveport, LA*	Peptoid-conjugated gold nanorods for targeted hyperthermia of cancer stem cells *Jonghae Youn[1], Peiyuan Kang[1], Evan Chen[2], Zhenpeng Qin[1], Jiyong Lee[2]* *[1]The University of Texas at Dallas, [2]The University of Texas at Tyler*	Imaging Ultrasonography Potentiates Intrapleural Fibrinolysis in a Rabbit Model of Empyema. *Andrey Komissarov[1], Christian De Vera[1], Rebekah Emerine[1], Jincy Jacob[1], Sunil Christudas[1], Krishna Sarva[1], Ali Azghani[2], Maryam Ranjpour[1], Brion Frierson[3], Tao Peng[3], Shaoling Huang[3], David McPherson[3], Steven Idell[1], Melvin Klegerman[3], Galina Florova[1]* *[1]Department of Cellular and Molecular Biology, The UT Tyler School of Medicine, Tyler, TX* *[2]Department of Biology, The University of Texas at Tyler, TX* *[3]Department of Internal Medicine; The University of Texas Health Science Center at Houston, Houston, TX*
8:45	Novel Socket Design for Myoelectric Prostheses: Innovative Solutions for Enhanced Comfort and Fit *Natalia Montalvo, Katherine Valdes, Om Vishanagra, Cameron Stott, Peter Smith, John Sparkman, Albert Manero* *Limbitless Solutions*	Polymeric Nanoparticle Drug Delivery for Antioxidant-Mediated ROS Reduction in a Cisplatin-Induced In Vitro Ototoxicity Model *Afoma Okafor, Joshua Worsham, Atziry Andrade, Anthony Koo, Eunsoo Yoo, Ashley Jones* *North Carolina Agricultural and Technical State University*	Advancement Towards a Clinical Decision Tool: Utility of Ultrasonography to Monitor and Quantify Clot Size in a Rabbit Model of Retained Hemothorax *Christian Jordan De Vera[1], Jincy Jacob[1], Krishna Sarva[1], Sunil Christudas[1], Oluwaseyi Akiode[1], Steven Idell[1], Andrey A Komissarov[1], Ali O Azghani[2], Galina Florova[1]* *[1]The University of Texas at Tyler Health Science Center* *[2]The University of Texas at Tyler*
9:00	Standardizing evaluation for multi-gesture control training and usability for electromyographic prosthesis *Abrianna Lalle, Jeffrey Stevenson, Delaney Gunnell, Samantha Migliore, Ethan Bell, Sophie Bennett, Pavan Senthil,*	Maximizing liposome tumor delivery by hybridizing with tumor-derived extracellular vesicles *Shoukath Sulthana, Dinesh Shrestha, Santosh Aryal* *University of Texas at Tyler*	Use of Ultrasound Imaging for Quantification of Clot Size in a Rabbit Model of Retained Hemothorax *Christian Jordan De Vera, Jincy Jacob, Krishna Sarva, Sunil Christudas, Oluwaseyi Akiode, Andrey A*

	Annelisa Swiersz, Viviana Rivera, Peter Smith, Matt Dombrowski, John Sparkman, Albert Manero *Limbitless Solutions*		*Komissarov, Ali O Azghani, Steven Idell, Galina Florova* *The University of Texas at Tyler Health Science Center*
9:15	Development of a Novel Suspension System for a Military Rucksack That Reduces Repetitive Stress Injuries during Ruck Marching (Ergonomics and Prosthetic) *M. Grossman, SA Peel, MR Paquette, DJ DiAngelo* *University of Tennessee Health Science Center, Memphis, TN*	Graphene-copper nanocomposite inhibits hACE-2 preventing cellular interaction of SARS-CoV coronaviruses *Sohel Quazi* *Texas College*	Volumetric imaging to recapitulate cardiac microstructure and contractile function *Yichen Ding* *University of Texas at Dallas*
9:30	Evaluation of a Dynamic Ankle Orthosis to Improve the Management of Tibial Bone Stress Injuries in Local Runners: A Proposal *PJ Johnson, MR Paquette, DJ DiAngelo* *University of Tennessee Health Science Center, Memphis, TN*	Formulation and characterization of CMPI nanoparticles for enhanced targeting of brain nicotinic receptors by positive allosteric modulator *Rahma Aly, Shoukath Sulthana, Robert Beaudoin, Ayman K. Hamouda, Santosh Aryal* *Department of Pharmaceutical Sciences and Health Outcomes, The Ben and Maytee Fisch College of Pharmacy, The University of Texas at Tyler*	Spinal Segmentation with a Hybrid Vision Transformer for the SPIDER Challenge *Md Tareq Mahmud, Subhajit Chakrabarty* *Louisiana State University Shreveport*
Friday	**Session 4:** AI Applications for Healthcare and Environment **Session Chair**: Subhajit Chakrabarty, PhD, *Louisiana State University, Shreveport* **Co-Chair:** Deepak Kumbhare, PhD, *Louisiana State University, Shreveport*	**Session 5:** Modeling **Session Chair**: Ayman Hamouda, PhD, *University of Texas at Tyler* **Co-Chair:** Nathalia Pinheiro Menegasso, PhD, *University of Texas at Tyler*	**Session 6:** Nanomedicine and Drug Delivery II **Session Chair:** Jayoung Kim, PhD, *University of North Texas Health Science Center* **Co-Chair:** Viswanathan Sundaram, PhD, *University of Texas at Tyler*
10:00	SpineSegGAN: Automatic Segmentation of Lumbar Spine *Devesh Sarda, Subhajit Chakrabarty, Udaysinh Rathod, Mridula Mavuri* *Louisiana State University Shreveport*	Optimizing Iodine-124 PET Imaging Protocol for Thyroid Cancer Ablation Using Pharmacokinetic Modeling *Xiang Kong* *Biomedical Engineering Department, Florida International University*	**Keynote:** Future of Nanomedicine: Microrobots, AI, and Nanopores for Precision Diagnostics and Therapy *Minjun Kim* *Southern Methodist University*
10:15	Real-Time Patient Safety System Using Deep Learning *Udaysinh Rathod[1], Subhajit Chakrabarty[1], Devesh Sarda[1], Mridula Mavuri[1], Deepak Kumbhare[2], Stanley Hoang[2], Christian Quinones[2], John Wilson[2], Toluwanimi Atewogbola[2]* *[1]Louisiana State University Shreveport, [2]Louisiana State University Health Science Center Shreveport*	A Dynamical Latent Variable Model of Human Behavior in Competitive Interaction *Ken Arai[1], Ali Yousefi[2], Amer Ziouziou[3], Pedram Rajaei[3], Christinejulie Eyanuku[4]*	
10:30	More accurate prediction of PM 2.5 from MODIS satellite using Top-Of-Atmosphere Reflectance *Mridula Mavuri[1], Subhajit Chakrabarty[1], Devesh Sarda[1], Udaysinh Rathod[1], Tirthankar Chakraborty[2]* *[1]Louisiana State University Shreveport, [2]Pacific Northwest National Laboratory*	High frequency acoustic multiple scattering analyses using boundary integral equations *Tahsin Khajah* *Mechanical Engineering Department, University of Texas at Tyler*	Novel dual imaging nanoparticles to stimulate therapeutic angiogenesis for the treatment of peripheral arterial diseases *Tam Nguyen[1], Ethan Gerhard[2], Bushra Afzal[3], Vy Tran[1], Priyanka Iyer[1], Na Nguyen[1], Cynthia Co[1], Luis Soto[1], Le Yu[4], Su Yan[2], Jian*

			Yang[5], Ralph Mason[3], Kytai Nguyen[1] *[1]The University of Texas at Arlington, [2]The Pennsylvania State Universityt, [3]UT Southwestern Medical Center, [4]University of Missouri-Kansas City, [5]Westlake University*
10:45	Predicting Fitbit Sleep Scores with Feature Importance Insights *Md Mashfiquer Rahman, Sharmin Nahar, Subhajit Chakrabarty* *Louisiana State University Shreveport*	Modeling Temperature Effects on Nitric Oxide Dynamics and Vascular Diameter *Leila Seidabadi[1], Fateme Esmailie[2, 3]*	Novel hybrid small-molecules and topical drug delivery strategies for treating optic neuropathy *Suchismita Acharya, Charles E. Amankwa, Biddut Debnath* *University of North Texas Health Science Center*
11:00	Modelling surface temperature and influenza-like illnesses using satellite data *Ochi Jideofor, Subhajit Chakrabarty* *Louisiana State University Shreveport*	High-Fidelity 3D Transient Blood Flow Simulation in Patient-Specific Vascular Models Using an In-House CFD Solver *Shuang Tu, Malik Baggett, Chao Jiang* *Jackson State University*	Anthracene based Organo-ruthenium arene complexes as Potential Anticancer Agents: Synthesis, Characterization, Mechanistic Insights, and Prospects for Liposomal Nano Drug Delivery *Neethu K Sankaranarayanan[1], Viswanathan Sundaram[2], Dharmaraj Nallasamy[3]* *[1]Avinashilingam Institute for Home Sciences and Higher Education for Women Coimbatore Tamilnadu India, [2]Department of Pharmaceutical Sciences and Health Outcomes, University of Texas at Tyler, Texas [3]Department of Chemistry, Bharathiar University, Coimbatore, India*
11:15	Predicting Alzheimer's Disease without using imaging data *Ahana Sil[1], Subhajit Chakrabarty[2]* *[1]South Brunswick High School, [2]Louisiana State University Shreveport*	Pressure Analysis of Patient Specific Aortic Phantoms in a Custom Mock Circulatory Loop *Ricardo Rodriguez, Fateme Esmailie* *University of North Texas*	Exploration of the Anti-cancer properties of gold nanoparticles biosynthesized using Vitis vinifera seeds and Aegle marmelos fruits extracts *Narendhirakannan R.T* *Department of Biochemistry, Kongunadu Arts and Science College, G.N. Mills (PO), Coimbatore, Tamil Nadu, India*
11:30	**Break**		
11:45-1:00	**Lunch and Plenary** **Gang Bao**, PhD, Department of Bioengineering, Rice University, Houston, TX Title: Nanomedicine and Genome Editing Approaches for Disease Therapies		
Friday **Afternoon Sessions**	**Session 7:** Chemical Engineering **Session Chair**: Fernando Resende, PhD, *University of Texas at Tyler* **Co-Chair:** Shuhao Liu, PhD, *University of Texas at Tyler*	**Session 8:** Cardiovascular: Impact of Obesity, Drug Abuse, and Chemotherapy in Cardiac Health and Therapies **Session Chair:** Chowdhury S. Abdullah, PhD, University of Texas at Tyler	**Session 9** Neuroscience **Session Chair:** Lir-Wan Fan, PhD., University of Mississippi Medical Center **Co-Chair:** Yi Pang, PhD., University of Mississippi Medical Center

		Co-Chair: Mohammad Alfrad Nobel Bhuiyan, PhD, Louisiana State University Health Science Center at Shreveport	
1:15	Recovering Rare Earth Elements from Brine with Amino Acid-Anchored Two-Dimensional Materials *Zishu Cao[1], Derick Phanos[1], Charles Defor[1], Obaid Khan[2], Shaowei Yang[2]* *[1]University of Texas at Tyler* *[2]Cleveland State University*	**Keynote:** Molecular mechanisms and nano-particle drug delivery systems to combat doxorubicin cardiomyopathy *Md. Shenuarin Bhuiyan* *LSU Health Shreveport*	Microglia play essential roles in developmental myelination *Yi Pang[1], Shuying Lin[2], Kathleen Carter[1]* *[1]Department of Pediatrics, University of Mississippi Medical Center* *[2]Department of Physical Therapy, School of Health-Related Professions, University of Mississippi Medical Center*
1:30	Improved antifouling characteristics of material surfaces by applying nanomaterials and surface modifications *Shuhao Liu* *University of Texas at Tyler*		Neonatal inflammation causes sex-specific effects on attention-deficit/hyperactivity disorder (ADHD)-like behaviors, and homeostatic responses to sleep disturbances in adolescent rats using machine learning-based analysis *Lir-Wan Fan[1], Jonathan Lee[1], Silu Lu[1], Joseph Crosby[1], Charles Matheny[1], James Shaffery[2], Norma Ojeda[3], Haifeng Wang[4], Md Rokibul Hasan[5], Vignesh Nayak[6], Michelle Tucci[7], Yu-Ching Tu[8], Lu-Tai Tien[9]* *[1]Department of Pediatrics, Division of Newborn Medicine, University of Mississippi Medical Center, Jackson, MS 39216, USA, [2]Department of Psychiatry and Human Behavior, Animal Behavior Core, University of Mississippi Medical Center, Jackson, MS 39216, USA, [3]Department of Advanced Biomedical Education, University of Mississippi Medical Center, Jackson, MS 39216, USA, [4]Department of Industrial and Systems Engineering, Mississippi State University, Mississippi State, MS 39762, [5]Department of Data Science, University of Mississippi Medical Center, Jackson, MS 39216, USA, [6]Department of Pediatrics, Division of Pediatric Pulmonary, University of Mississippi Medical Center, Jackson, MS 39216, USA, [7]Department of Anesthesiology, University of Mississippi Medical Center,*

			Jackson, MS 39216, USA, [8]Department of Long-Term Care Management, Chung Hwa University of Medical Technology, Rende Dist, Tainan City, 71703, Taiwan, [9]School of Medicine, Fu Jen Catholic University, Xinzhuang Dist, New Taipei City 24205, Taiwan
1:45	Biological and Environmental Implications of Using Waste Glass Powder as Cement and Sand Replacement in Concrete *Ebubekir Siddik Yesil [1], Tayfun Altuğ Soylev[2]* *[1]Civil Engineer, Istanbul Turkey* *[2]Gebze Technical University*	Systemic Impacts of Methamphetamine Use: A Comprehensive Laboratory Analysis *Mohammad Alfrad Nobel Bhuiyan* *LSU Health Shreveport*	Intranasal insulin protects against brain injury and improves sensorimotor dysfunction following hypoxia-ischemia in P5 neonatal rats *Madison Klim[1], Carolyn Glendye[1], Jonathan Lee[1], Elizabeth White[1], Valerie Quach[1], Nilesh Dankhara[1], Silu Lu[1], Shuying Lin[2], Norma Ojeda[3], Gene Bidwell III[4], Yi Pang[1], Lu-Tai Tien[5], Michelle Tucci[6], Abhay Bhatt[1], Lir-Wan Fan[1]* *[1]Department of Pediatrics, Division of Newborn Medicine, University of Mississippi Medical Center, Jackson, MS 39216, USA, [2]Department of Physical Therapy, University of Mississippi Medical Center, Jackson, MS 39216, USA, [3]Department of Advanced Biomedical Education, University of Mississippi Medical Center, Jackson, MS 39216, USA, [4]Department of Neurology, University of Mississippi Medical Center, Jackson, MS 39216, USA, [5]School of Medicine, Fu Jen Catholic University, Xinzhuang Dist, New Taipei City 24205, Taiwan, [6]Department of Anesthesiology, University of Mississippi Medical Center, Jackson, MS 39216, USA*
2:00	Thermo-Catalytic Approaches for the Conversion of Biomass into Hydrocarbons *Fernando Resende* *University of Texas at Tyler*	Mitochondrial Dysfunction and Maladaptive Cardiac Remodeling Associated with Methamphetamine-Induced Cardiomyopathy *Chowdhury S Abdullah* *The University of Texas at Tyler*	Neonatal lipopolysaccharide exposure enhances methamphetamine-induced alterations in the dopamine transporter and reinstated behavioral sensitization in adult rats analyzed with explainable machine learning *Jonathan Lee[1], Kuo-Ching Wang[2], Norma Ojeda[3], Haifeng Wang[4], Han-Sun Chiang[5], Michelle Tucci[6], Han-Chi Wei[5], Asuka Kaizaki-Mitsumoto[7], Sachiko Tanaka[8], Nilesh Dankhara[1], Lu-Tai Tien[5], Lir-Wan Fan[1]* *[1]Department of Pediatrics, Division of Newborn Medicine, University of Mississippi Medical Center,*

			Jackson, MS 39216, USA, [2]Department of Anesthesiology, Shin Kong Wu Ho-Su Memorial Hospital, Taipei City, Taiwan, [3]Department of Advanced Biomedical Education, University of Mississippi Medical Center, Jackson, MS 39216, USA, [4]Department of Industrial and Systems Engineering, Mississippi State University, Mississippi State, MS 39762, USA, [5]School of Medicine, Fu Jen Catholic University, Xinzhuang Dist, New Taipei City 24205, Taiwan, [6]Department of Anesthesiology, University of Mississippi Medical Center, Jackson, MS 39216, USA, [7]Department of Pharmacology, Toxicology & Therapeutics, Division of Toxicology, School of Pharmacy, Showa University, Shingawa-ku, Tokyo 142-8555, Japan, [8]Center for Research and Development in Pharmacy Education, School of Pharmacy, Nihon University, Funabashi, Chiba 274-8555, Japan
2:15	Lead-Free Ca3BiX3 (X = F, Cl, Br, And I) Halide Perovskites for Photovoltaic And Energy Harvesting Applications: A First- Principles Study Md Adil Hossain, *Md Rasidul Islam, Md Masud Rana* *University of Texas at Tyler*	Stratifying Therapeutic Enoxaparin Dose in Morbidly Obese Patients by BMI Class: A Retrospective Cohort Study Young Lee *University of Texas at Tyler, Ben and Maytee Fisch College of Pharmacy*	Innovative hydrogel composites treatment and neuronal assessment following craniofacial defects in adolescent rats Almia Valentine[1], *Jonathan Lee[2], Chloe Batiste[2], Madisyn Avery[2], Charles Matheny[2], Shuying Lin[3], Amol Janorkar[4], Chipo Chapusha[4], William Farmer[4], David Gordy[5], Susana Salazar Marocho[4], Bernadette Grayson[6], Michelle Tucci[7], Lir-Wan Fan[2]* *[1]McNair HBCU Research Scholars Program, Tougaloo College, MS 39174, USA, [2]Department of Pediatrics, Division of Newborn Medicine, University of Mississippi Medical Center, Jackson, MS 39216, USA, [3]Department of Physical Therapy, University of Mississippi Medical Center, Jackson, MS 39216, USA, [4]Department of Biomedical Materials Science, University of Mississippi Medical Center, Jackson, MS 39216, USA, [5]Department of Radiology, University of Mississippi Medical Center, Jackson, MS 39216, USA, [6]Department of Population*

			Health Science, University of Mississippi Medical Center, Jackson, MS 39216, USA, [7]Department of Anesthesiology, University of Mississippi Medical Center, Jackson, MS 39216, USA
2:30	Predicting nitrogen dioxide pollutant level for three cities using satellite data *Tahmina Akter Anondi, Subhajit Chakrabarty* *Louisiana State University Shreveport*	Decreasing heart inflammation in a diabetic mouse model with *Hippocraeta Velutina* extract *Maricica Pacurari* *Jackson State University*	
Friday **Afternoon Sessions**	**Session 10:** Neuroscience-Neuromodulation II **Session Chair**: Elisa Castagnola, PhD, *Louisiana Tech University* **Co-Chair:** Deepak Kumbhare, PhD, *LSU Health Shreveport*	**Session 11:** Nanomedicine and Drug Delivery-IV **Session Chair**: Dustin Patterson, PhD, *University of Texas at Tyler* **Co-Chair:** Eunsoo Yoo, PhD, *North Carolina A&T State University*	**Session 12** Target cell signaling in disease **Session Chair**: Zakaria Abd Elmageed, PhD, *Edward Via College of Osteopathic Medicine (VCOM)* **Co-Chair:** Shaimaa Gad, PhD, *Loyola University Chicago*
3:00-3:30 (Keynote)	MXene/MOF Composite Electrochemical Sensor for Dopamine Detection *Sara Dehdashtian, Yan Deng, Yixin Liao, Teresa A Murray, Shengnian Wang* *Louisiana Tech University*	Exosomes as Precision Tools for the Next Era of Regenerative and Diagnostic Medicine" (Subtitle: From Neurological Repair to Liquid Biopsy - A Translational Journey) *Dongki Kim* *ExoTop Theragnostics Inc.*	Targeting Ribosome Biogenesis in Cancer Therapy *Bilal Hafeez, Mudassier Ahmad, Sahir Alvi, Alfia Bilal* *The University of Texas Rio Grande Valley*
3:30	Enhanced Neurochemical Detection Using MXene/PEDOT-Coated Flexible Glassy Carbon Microelectrode Arrays *Ilaria Gatti[1], Karamullah Eisawi[2], Michael Naguib[2], Elisa Castagnola Castagnola[1]* *[1]Louisiana Tech University* *[2]Tulane University*	Oxygen Sensitive Drug Release Using Hemoglobin Microbubbles: A New Approach to Targeting Hypoxia in Ultrasound-Mediated Drug Delivery *Ghazal Rastegar, Mohammad Salman, Shashank Sirsi* *University of Texas at Dallas*	Harnessing Lichen Acids for Targeting Triple-Negative Breast Cancer *Hassan Ebrahim* *Department of Biomedical Sciences, Edward Via College of Osteopathic Medicine, Monroe*
3:45	Neuroprotective Efficacy of Minocycline Therapy in Experimental Moderate Traumatic Brain Injury *Geetika Sruti Vutukuri Amarnath[1], Ritika Roy[1], Pragya Dhungel[1], Yashwanthi Yanamadala[1], Afrika Williams[1], Claire Jones[1], Xiao-Hong Lu[2], Teresa Murray[1]* *[1]Louisiana Tech University* *[2]Louisiana State University Health Sciences Center-Shreveport*	Reengineered Immunovesicles in Drug Delivery *Viswanathan Sundaram, Santosh Aryal* *University of Texas at Tyler*	AI-Guided Discovery of Brain-Penetrant Dual HER2/VEGFR2 Inhibitors for Targeted Therapy of Breast Cancer Brain Metastases *Hamed Ali, Mostafa M. A. Aref, Eneye Ajayi, Md Emran Hossain* *Department of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Texas A&M University, College Station, TX*
4:00	The role of astrocytes in active and silent synapse formation *Isabella Farhy-Tselnicker* *Texas A&M University*	Long-Acting Drug Delivery from Core-Shell Microparticles Offering Pre-Programmed and Customizable Release Kinetics *Heather (Chia-Chien) Hsu[1], Katherine Chen[2], Haonan Huo[3], Tyler Graf[3], Alyssa Kunkel[2], Kevin McHugh[1, 2]* *[1]Department of Chemistry, Rice University, Houston, TX, USA,* *[2]Department of Bioengineering,*	Toxicity and Inflammatory Response of Cannabidiol (CBD) in Lung Epithelial Cells *Nathalia Pinheiro Menegasso, Amal Ehab Al-Shweiky, Robert Beaudoin, Ayman Hamouda* *The University of Texas at Tyler*

		Rice University, Houston, TX, USA, [3]Institute of Chemistry, Chinese Academy of Sciences, China	
4:15	Brain Organoid Intelligence: Anticipatory Ethics, Categorical Errors, and a Danger Zone for Neuroscience *Michael Nestor, Richard Wilson* *The National Academies of Science, Engineering, and Medicine*	Design and Optimization of Copolymer Nanoparticles for Targeted Drug Delivery Across the Blood-Brain Barrier in Alzheimer's Disease *Afoma Okafor, Ashley Jones, Joshua Worsham, Anthony Koo, Eunsoo Yoo* *North Carolina Agricultural and Technical State University*	Understanding pathological valvular degeneration in bicuspid aortic valves *Carla Lacerda* *The University of Texas at Tyler*
4:30	**Workshop 1:** **4:30-6:30** **Workshop-1 Chair**: Hamed Ali, PhD, Texas A&M College of Pharmacy **Cochair:** Eneye Ajayi, Texas A&M University, College of Pharmacy,	Versatility of Extracellular Vesicles in Biomedical Applications *Arunkumar Pitchaimani* *Vellore Institute of Technology, India*	*Nicotinic Receptors in Respiratory Diseases: Insight from Experimental Models* *Carla Maximo Prado, Nathhalia Montouro Menegasso, Ayman Hamouda* *[1]Universidade Federal de São Paulo, [2]University of Texas at Ty;er, Tyler, TX*
4:30-4:45		Electrospun Core-Shell Microfibers for Controlled Drug Delivery and Cellular Activities *Diala Bani Mustafa, Carla Lacerda, Shih-Feng Chou* *The University of Texas at Tyler*	Repurposing Atypical Antipsychotics for Aggressive Prostate Cancer Treatment: Investigating Their Role in Cell Proliferation, Migration, and ER Stress *Grace Lee* *Department of Biomedical Science, Discipline of Pharmacology, Edward Via College of Osteopathic Medicine, Monroe*
4:45-6:00	**Poster Session**		

Posters stay till Saturday 3 pm

End of Friday Sessions

Saturday Sessions

Topics Saturday **Morning Sessions**	**Session 13:** Innovative polymeric biomaterials **Session Chair**: Urara Hasegawa, PhD, *The Pennsylvania State University* **Co-Chair:** André J. van der Vlies, PhD, *The Pennsylvania State University*	**Session 14:** Electrophysiology and neuromodulation **Session Chair**: Deepak Kumbhare, PhD, *LSU Health Shreveport* **Co-Chair:** Elisa Castagnola, PhD., *Louisiana Tech University*	**Session 15:** Ethical issues in bioengineering **Session Chair**: Subrata Saha, PhD*School of Dentistry, University of Washington, Seattle, and in The Department of Biomedical Engineering, University of Houston.* **Co-Chair:** Ram Vaderhobli, DDS, MS, *University of California San Francisco*	**Session 32** "From Atoms to Algorithms: Medicinal Chemistry and CADD for Next-Gen Therapeutics." **Session Chair**: Hamed I. Ali, PhD., *Texas A&M College of Pharmacy* **Co-Chair:** Khaldoun Abdelwahed, PhD, *The University of Texas at Tyler*
7:30		Using Stereo-EEG to Characterize Musicogenic Neural Entrainment in Humans *Luke Landry[1], Roohi Katyal[1], mostafa hotait[1], Jamie Toms[1], Bharat Guthikonda[1], Deepak kumbhare[1], Alena Stevens[2]* *[1] LSU Health Shreveport, [2]Ochsner*	AI and DEXA Scans: Ethical Issues and the Role of Anticipatory Ethics *Richard Wilson, Mame Diop* *Towson University*	**Keynote:** Session invited Keynote Speaker Title and Bio needed Dr. Dai Lu
7:45	Development and Application of Elastin-Inspired Self-Assembling Designer Polypeptides *Ayae Sugawara-Narutaki* *Institute of Science Tokyo, Japan*	Psychedelic Neuromodulation in Addiction: Linking Behavior, Genes, and Brain Activity *Bo Wood[1, 2], Nicholas McComb[1], Greyson Jadwin[3], Deepak Kumbhare[2, 3], Kevin Murnane[1, 2, 4]* *[1]Department of Pharmacology, Toxicology, and Neuroscience, LSU Health Shreveport, Shreveport, Louisiana, USA, [2]Louisiana Addiction Research Center, Shreveport, Louisiana, USA, [3]Department of Neurosurgery, LSU Health Shreveport, Shreveport, Louisiana, US, [4]Department of Psychiatry and Behavioral Medicine, LSU Health Shreveport, Shreveport*	Bioethical Implications of Emerging Technologies in Dentistry *Paridhi Garg, Tulika Srivastava* *University of Washington School of Dentistry, Seattle*	
8:00	Polymeric thiophene for detecting mild traumatic brain injury-specific microRNAs *Andre J van der Vlies[1], Pranay Saha[1], Teresa Aditya[1], Ketan Dighe[1], Steven Hicks[2], Dipanjan Pan[1]* *[1]The Pennsylvania State University, [2]Penn State Health Children's Hospital*	Characterization of Microelectrode Recordings Collected During Deep Brain Stimulation Surgeries *Deepak Kumbhare[1], Jamie Toms[1], Kathryn Holloway[2], Mark Baron[3], Nicholas McComb[4], James Bridges[1]* *[1]LSU Health Science Center Shreveport Department of Neurosurgery, [2]Medical College of Virginia Department of Neurosurgery, [3]Medical*	Navigating Ethical Challenges in Bioengineering Research *Lillion Hamil[1], Kenneth R. Butler[2], Gary L. Hami[1, 2]* *[1]Belhaven University, [2]University of Mississippi Meidical Center*	New Benzofuran-Pyrazole-Based Compounds as Promising Antimicrobial Agents: Design, Synthesis, DNA Gyrase B Inhibition, and In Silico Studies *Sameh Abdelwahed* *Prairie View A&M University*

		College of Virginia Department of Neurology, [4]LSU Health Science Center Shreveport		
8:15	Polymeric micelles for controlled delivery of reactive sulfur species *Urara Hasegawa* *Pennsylvania State University*	Analyzing Intraoperative Neuromonitoring Signals Using Advanced Signal Processing and Machine Learning *Christian Quinones, John Wilson Jr., Toluwanimi Atewogbola[1], Bharat Guthikonda, Stanley Hoang, Deepak Kumbhare* *Louisiana State University Shreveport*	Can AI replace a medical doctor? Perspectives of a physician-scientist AI trainer *Fred Xavier,* *Texas Christian University*	Integrated Computational Strategies for Accelerated Drug Discovery Against Global Health Threats *Eneye Ajayi, Mostafa Aref, Md Emran Hossain, Rokaia Abdullah, Ling Yang, Yinan Wei, Hamed Ali* *Department of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Texas A&M University.*
8:30	Synthesis and Characterization of Degradable Polymeric Microparticles for Drug Delivery *Chipo Chapusha[1], Nicholas McGowan[1], Anthony Haisley[1], Jared Cobb[2], Amol Janorkar[1]* *[1]University of Mississippi Medical Center, [2]U.S. Army Engineer Research and Development Center*	Quantitative Electroenchephalography (QEEG) Analysis of Patients with Deep Brain Stimulation Implants. *Ian Angel* *LSU Health Shreveport (LSUHS)*	3D Printed Skin and Artificial Intelligence: An Anticipatory Ethical Analysis *Ian Holmes, Richard Wilson* *Towson University*	Computational Predictions of Positive Allosteric Modulator Binding Sites in High-Sensitivity (α4)2(β2)3 Nicotinic Acetylcholine Receptors Using PAM-Bound Cryo-EM Structures *Khaldoun Abdelwahed, Emily Phelps, Ayman hamouda* *Department of Pharmaceutical Sciences and Health Outcomes, University of Texas at Tyler*
8:45	Ionic Liquid-Coated Nanoparticles for CNS Delivery of Antiretroviral Therapy in HIV *Duoyi Hu, Christine Hamadani, Fakhri Mahdi, Priyavrat Vashisth, Ivani Jayalath, Vignesh Sundaresan, Jason Paris, Eden Tanner* *University of Mississippi*	Neuromodulation of the Basal Nucleus of Meynert: Unraveling the effect of Stimulation Patterns and Cognitive States *Deepak Kumbhare[1], Greyson Jadwin[2]* *[1]Principal Investigator, LSU Health Science Center Shreveport Department of Neurosurgery, [2]Research Associate, LSU Health Science Center Shreveport Department of Neurosurgery*	3D Printing in Legal Pathophysiology: Applications in Criminal, Personal Injury, and Malpractice Cases *Kiley Pulliam[1], Tiffany Siharath[2], Patrick Davis[3], Joe Landreneau[4], Steve Alexander[1]* *[1]LSUHS, [2]LSUS, [3]Loyola College Prep,* *[4]Landreneau Law LLC*	Advanced Selective Kinase Inhibitors for Enhanced Treatment of CNS Metastases of Breast Cancer *Mostafa Aref, Md Emran Hossain, Eneye D. Ajayi, Rokaia Abdullah, Hamed I. Alyismail* *Department of Pharmaceutical Sciences. Irma Lerma Rangel College of Pharmacy, Texas A&M University*
9:00	Discrete Brush Polymers Enhance 19F MRI Performance through Architectural Precision *Jimmy Lawrence* *Louisiana State University*			"Discovery of Potent Anticancer Kinase Inhibitors via Integrated In Vitro and In Vivo Screening" Md Emran Hossain, Rokaia Abdullah, Eneye D. Ajayi,

				Mostafa M.A Aref, Hamed I. Ali Department of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Texas A&M University
9:15	**Break**			Unveiling New Agents for Mutant HER2T798I Breast Cancer: In silico study *Wafa Masoud[1], Radwan alnajjar[2], Hamed I. Ali Ali[3]* *[1]Department of Pharmaceutical Sciences, PharmD Program, School of Health and Medical Science, Libyan International University, Benghazi, Libya, [2]CADD Unit, Faculty of Pharmacy, Libyan International University, [3]Department of Pharmaceutical Sciences, Irma Lerma Rangel College of Pharmacy, Texas A&M University, College Station, TX, USA*
	Session16: Clinical Rehab **Session Chair**: Albert Manero, PhD, *University of Central Florida* **Co-Chair:** Felix Adah, PhD, *University of Mississippi Medical Center*	**Session 17:** Nanomedicine **Session Chair**: Santosh Aryal, University of Texas at Tyler **Co-Chair:** *Narendhirakannan RT, Kongunadu Arts and Science College, India*	**Session 18:** Biology and Biochemistry **Session Chair**: **Co-Chair:** May Abdalaziz, PhD, The *University of Texas at Tyler*	**Break 9:30-9:45**
9:30	Limbitless Journey: Advancing Low Stress Hands-Free Mobility Training through VR and MR Gaming *Maanya Pradeep, Alex Da Vera Cruz, Delaney Gunnell, Pavan Senthil, Peter Smith, Matt Dombrowski, John Sparkman, Albert Manero University of Central Florida*	**Keynote:** Overcoming barriers to nanoparticles reaching tumors via the blood stream and overcoming depth limitation of light to trigger tumor events *Sunil Krishnan, UT Health Houston*	**Keynote:** Inhibiting the inhibitor: would targeting PAI-1 result in a low-dose, well-tolerated treatment of empyema? *Andrey Komissarov[1], Christian De Vera[1], René Girard[1], Krishna Sarva[1], Rebekah Emerine[1], Ali Azghani[2], Sunil Christudas[1], Jincy Jacob[1], Mignote Chamiso[1], Danna Morris[1], Sophia Karandashova[1], Paul Declerck[3], Steven Idell[1], Galina Florova[1]* *[1]Department of Cellular and Molecular Biology, The UT Tyler School of Medicine, Tyler, TX* *[2]Department of Biology, The University of Texas at Tyler, TX*	**Session 19:** AI ethics **Session Chair**: Richard Wilson, PhD., *Towson University* **Co-Chair:** Joseph A. Cameron, PhD., *Jackson State University*
9:45	Hand Dexterity Evaluation in Virtual Reality: A Framework for Sensorimotor Assessment *Ethan Bell, Sophie Bennett, Alex Da Vera Cruz, Delaney Gunnell, Abrianna Lalle, Maanya Pradeep, Pavan Senthil, Peter Smith, Matt*			AI in Your Pocket: A Smartphone Platform for Building Medical Chatbots *Deepa Reghu, Victor Bii, Charles Bland Department of Natural Sciences and Environmental Health, Mississippi Valley State*

	Dombrowski, John Sparkman, Albert Manero Limbitless Solutions		*[3]Laboratory for Therapeutic and Diagnostic Antibodies, Department of Pharmaceutical and Pharmacological Sciences, KU Leuven, Belgium*	*University, Itta Bena, MS*
10:00	Chronic Plantar Fasciitis Responses to Radial/Low Energy Extracorporeal Shock Wave Therapy: A Systematic Review *Felix Adah, University of Mississippi Medical Center*	Macrophage-mediated Breast Cancer Liver Metastasis therapy with lipid nanoparticles carrying siRNA for EphA2: in vitro and in vivo studies *Anjana Tiwari Houston Methodist Research Institute*	Novel Mechanisms in Pleural Fibrosis: Role of coagulation protease-induced extracellular vesicles *Wenyi Qin[1], Shuzi Owens[1], Luis Destarac[2], Steven Idell[1], Vijaya Mohan Rao Lella[1], Torry Tucker[1], Shiva Keshava[1]* *[1]UT Tyler Health Science Center* *[2]UT Health East Texas*	AI Assisted Technology Detects Nanoparticles in Water: Ethical Considerations for Human Health *Benjamin Rozencwaig[1], Richard Wilson[2]* *[1]Towson High School* *[2]Towson University*
10:15	Lumbar load analysis in the sweeping gesture *Laura Valentina Castro Castañeda, Derian Espinosa, Deysi Yohanna Gómez Rey Universidad Militar Nueva Granda,* Columbia	Mitochondrial function restoration as a powerful therapeutic avenue in atherosclerosis *Elvin Blanco Houston Methodist Research Institute*	In-Silico Design of Therapeutic Peptides to Prevent Insulin Aggregation *Thanh Tien Dao, Nicolas Campos, Bidisha Sengupta Stephen F. Austin State University*	Face Recognition Based Applications and Disease Diagnosis: Ethical and Anticipated Ethical Issues *Eunice Hong, Richard Wilson Towson University*
10:30	Smartphone-Enabled Point of Care Sensing and Imaging Tools for Medical Applications *Hatice Ceylan Koydemir Department of Biomedical Engineering, Texas A&M University*	Ultrasound-Responsive SonoScaffolds for Remote Control of Cell Signaling *Carolyn Schutt Ibsen Oregan Health Science University*	Phospholipid transporters - why have three? *Ashutosh Rai[1], Katsuhiro Sawasato[2], Anastasiia Kozlova[2], Haley Bennett[1], Genevieve Sparagna[3], Mikhail Bogdanov[2], Angela Mitchell[1]* *[1]Department of Biology, Texas A&M University* *[2]Department of Biochemistry and Molecular Biology, McGovern Medical School at The University of Texas Health Science Center at Houston* *[3]Department of Medicine, Division of Cardiology, University of Colorado Anschutz Medical Campus*	Artificial Intelligence in the Medical School Curriculum: Anticipated Ethical Issues *Richard Wilson Towson University*
10:45	A Dynamic Ankle Orthosis Improved Patient Comfort During Extended Wear Compared to an Orthopedic Walking Boot *PJ Johnson, MR Paquette, DJ DiAngelo, University of Tennessee Health Sciences*	Pancreatic Cancer Detection using Dielectrophoresis-Based Recovery of Circulating Cancer-Derived Nanoparticles *Stuart Ibsen CEDAR, Knight Cancer Institute, Oregon Health and Science University*	Roles Of Striatal Neuronal and Synaptic Plasticity and Dopamine D2r Isoforms in Drug-Induced Dyskinesia *YanYan Wang Department of Cellular and Molecular Biology, The University of Texas at Tyler School of Medicine, Tyler, Texas*	Accurate And Efficient Chemical Similarity Search Tool and Contact Distribution-Matching Method Jointly Identify FDA-Approved Drugs That Modulate SARS-CoV2 -1PRF And Suppress Its Replication *Ahmed Mohamed Ragab Mohamed Sanad[1], Sui-Yuan Chang[2], Jin-Der Wen[3], Lee-Wei Yang[1]* *[1]Institute of Bioinformatics and*

				Structural Biology, National Tsing Hua University *[2]Department of Laboratory Medicine, National Taiwan University Hospital, Taipei 100, Taiwan* *[3]Institute of Molecular and Cellular Biology, National Taiwan University, Taipei, Taiwan*
11:00	**Break**			
	Session 20: Biomechanics II **Session Chair**: Tanvir Faisal, University of Louisiana at Lafayette **Co-Chair:** Md Rasidul Islam, PhD, *The University of Texas at Tyler*	**Session 21:** AI and Wearable Technologies for Smarter Healthcare Outcomes **Session Chair**: Prabha Sundaravadivel, *The University of Texas at Tyler* **Co-Chair:** Premananda Indic, *The University of Texas at Tyler*	**Session 22:** Career Development Panel **Session Chair**: May Abdelaziz, PhD, *The University of Texas at Tyler* **Co-Chair:** Shashi Kant, PhD, *The University of Texas at Tyler*	Panel -Tyler **Session Chair:** Angela Nunez, University of Texas at Tyler
11:15	Synergistic Impact of Enzyme Mediation and Traumatic Insults on Morpho-Mechanical Properties of Joint Cartilage *Asif Istiak, Tanvir Faisal* *University of Louisiana at Lafayette*	**Keynote:** Human-allied AI - Automate or Collaborate? *Sriraam Natarajan* *University of Texas at Dallas*	Balancing Act: A Career in Academia *Sahshi Kant* *The University of Texas at Tyler*	Panel discussion for 45 mins. 11:15 to 12:00
11:30	Computational Homogenization of the Mechanics of Depth-Dependent Articular Cartilage under Compressive Loading *Md Saiful Islam, Tanvir Faisal* *Department of Mechanical Engineering, University of Louisiana at Lafayette, Lafayette, LA, USA*		Taking Projects to the Next Level: From Ideas to Entrepreneurship *Matthew Lucci* *Runatek*	
11:45	Modeling an Auxetic Helmet Liner for NFL Impact Scenarios: A Finite Element Approach *Md Imrul Kayes, Tanvir Faysal* *University of Louisiana at Lafayette*	Enabling On-Device Automation of Low-Power Wearable Energy Management Systems *Shekhar Suman Borah[1], Mustafa Hannoun[2], Premananda Indic[1], Prabha Sundaravadivel[1]* *[1]Department of Electrical and Computer Engineering, The University of Texas at Tyler, Tyler, Texas, USA 75799* *[2]Independent Researcher, Austin, Texas, USA*	A Career in STEM for Women and Underrepresented Minorities *May Abdelaziz* *The University of Texas at Tyler*	
12:00	Effects of Frequency and Amplitude on Osteoblast-Like Cell Viability and Metabolism Under Vibrational Loading	AI Powered Early Morbidity Detection in Preterm Infants: An Application to	Career Development Discussion Q & A	

	Eric Flynn Mabowitz, Steven Elder, Matthew Ross, Hamed Bakhtiarydavijani, Debarshi Roy, LaShan Hendrix, Raheleh Miralami *Mississippi State University, Alcorn State University, University of Cincinnati*	Bronchopulmonary Dysplasia *Pravitha Ramanand[1], Rhythem Tahrin[1], Premananda Indic[1], Namasivayam Ambalavanan[2]* *[1]Department of Electrical and Computer Engineering, The University of Texas at Tyler, TX* *[2]Department of Neonatology, University of Alabama at Birmingham, AL.*		
12:15		FractureDetect: AI-Driven Computer Vision for Accurate Bone Fracture Detection and Classification *Chase Brown, Prabha Sundaravadivel* *The University of Texas at Tyler*		
12:30 - 1:30	**Panel and Lunch**			
Saturday **Afternoon Sessions**	**Session 23:** Medical devices and implants **Session Chair**: Giovanni Solitro, PhD, *Louisiana State University Health Sciences Center* **Co-Chair:** Mario Lobao, *Louisiana State University Health Sciences Center*	**Session 24:** Molecular and Tissue Engineering **Session Chair**: Maricica Pacurari, PhD, *Jackson State University* **Co-Chair:** Sohel Quazi, PhD, *Texas College*	**Session 25:** Signaling Pathways **Session Chair**: Farah Deba, PhD, *The University of Texas at Tyler* **Co-Chair:** Lakshmi PTV, PhD, Pondicherry University, Puducherry, India	**Session 26:** Nanomedicine and Drug Delivery I **Session Chair:** Jayoung Kim, PhD, *University of North Texas Health Science Center* **Co-Chair:** Viswanathan Sundaram, PhD, *University of Texas at Tyler*
1:45	**Keynote:** Short Bowel Syndrome: Pursuing a 'Longer' Intestinal Segment via Distraction Enterogenesis *Donald Sorrells, LSU Health, Shreveport*	Prediction Of Osteogenic Differentiation of Mesenchymal Stromal Cells by Cell Molecular Signature *Qinqin Xu, Patrick Massey, Shane Barton, Yufeng Dong* *LSU Health-Shreveport*	Signal Crosswire: Crosstalk in S. aureus Signaling Systems *May Abdelaziz* *The University of Texas at Tyler*	**Keynote:** Overcoming barriers *In vivo* Neuron-Specific Delivery of Biomolecules *Zhenpeng Qin[1, 2]* *[1]University of Texas at Dallas, [2]University of Texas Southwestern Medical Center*
2:00		Exploiting radiation-induced tumor vulnerabilities via targeted antibody-drug conjugates *P.M. Quan Mai, Sunil Krishnan, Geraldine Vijay* *UT Health Houston*	Epigenetic Reprogramming of Vitamin D Receptor and lncRNA Nkx2-2as Attenuates of Wnt/β-Catenin Signaling in Breast Cancer *Anjali K Ravi[1], Saradhadevi Muthukrishnan* *[1]Department of Biochemistry, Bharathiar University, Coimbatore, Tamil Nadu, India*	
2:15	GLP-2 Intestinal Expansion Sleeves for in vivo Intestinal Expansion *Ryan H Field[1], Joshua C Colvin[1], Jonathan S*	TG-ME-2: An AI-Driven Pipeline for High-Precision Analysis of Spatial Transcriptomics in Human Disease *Mario Flores,*	Fibrinolytic Activity Assay, FPA96F, for Rapid *In Vitro* and *Ex Vivo* Evaluation of Linear Peptides Protecting Fibrinolysins from	Targeted delivery of therapeutic protein *Nathaniel Hwang* *Seoul National University*

	Alexander[2], Donald L Sorrells[1] *[1]Department of Surgery, LSU Health Shreveport, LA, [2]Department of Molecular and Cellular Physiology, LSU Health Shreveport, LA* *[1]Department of Surgery, LSU Health Shreveport, LA,* *[2]Department of Molecular and Cellular Physiology, LSU Health Shreveport, LA*	*The University of Texas at San Antonio*	Plasminogen Activator Inhibitor (PAI-1) *Oluwaseyi Akiode, Rebekah Emerine, Jincy Jacob, Galina Florova, Andrey Komissarov* *Department of Cellular and Molecular Biology, The UT Tyler School of Medicine.*	
2:30	Controlled D50 Injections Reduces Gastrostomy Tube Leakage *Jensen (Alex) Crifasi[1], Fallon Vedros[1], Cole Evensky[2], Kiley Pulliam[3], Donald Sorrells Jr.[1], Steven Alexander[1]* *[1]LSU Health Shreveport School of Medicine* *[2]Willis-Knighton GME Shreveport* *[3]LSU Health Shreveport*	Developing anticancer protein-protein interaction inhibitors targeting HER2 Receptor *Itzel Montoya[1, 2], Phillip Mosier[3], May Abdelaziz[2]* *[1]University of Texas at Tyler Department of Chemistry and Biochemistry* *[2]Fisch College of Pharmacy* *[3]Medical College of Wisconsin*	*In vitro* Evaluation of PAI-1 Neutralization by Novel GLP-friendly peptides in Rabbit and Human Mesothelial Cells *Sunil Christudas[1], Jincy Jacob[1], Oluwaseyi akiode[1], Krishna Sarva[1], Christian DeVera Jordan[1], Galina Florova[1], Andrey Komissarov[1], Paul J declerck[2]* *[1]Cellular and molecular biology, UT Tyler school of Medicine, Tyler, TX, United states* *[2]Laboratory for Therapeutic and Diagnostic Antibodies, department of Pharmaceutical and Pharmacological Sciences, KU, Leuven, Belgium*	Nanoparticle-Based Targeted Therapy for Bone Metastases in Prostate Cancer *Amalendu Ranjan* *UNT Health Science Center*
2:45	Estrogen-coated Vaginal Expansion Sleeves Expand the Rat Vaginal Canal *Ashlyn G. Gotberg, Joshua C. Colvin, Hannah Meyer, Rachel Cline, Jonathan Steven Alexander, Giovanni Solitro, Donald Sorrells, Mila Shah-Bruce* *[1]Louisiana State University Health Sciences Center, Shreveport, Louisiana*	Computational and experimental studies recognized the potential natural metabolites and Antisense oligonucleotides to combat the challenging MRSA and MDR-S. aureus *Lakshmi PTV,* *Pondicherry University*	Role of Mechanical Impact on The Injury Risk of Neural Cells *Ashfaq Adnan* *University of Texas at Arlington*	Targeted delivery via HDL-mimicking drug delivery platform to circumvent peripheral toxicity and enhanced therapeutic effect *Nirupama Sabnis[1], Sangram Raut[2], Andras Lacko[1], Bruce Bunnell[1]* *[1]UNT Health Science Center, Fort Worth, TX, [2]Clinical investigations of Texas*
3:00	An Experimental Investigation of the Dermabond Effect on Knot Strength *Morgan Brown* *LSU Health Shreveport*	The Novel Role of Dedicator of Cytokinesis 2 in Cardiovascular Diseases *Xia Guo* *University of Texas Health Science Center at Tyler*		Immunotherapy at the Speed of Sound: Ultrasound-Guided Strategies for Targeted Immune Activation *Sina Khorsandi[1], Shea Garland[1], Nazia Hafeez[1], Wen Jiang[2], Jacques Lux[1]* *[1]UT Southwestern Medical Center, [2]MD Anderson Cancer Center*

3:15				Severely Polarized Extracellular Acidity in Tumors *Qiang Feng, Jinming Gao* *University of Texas Southwestern Medical Center*
	Session 27: AI-enhanced Biosensing and Energy Harvesting **Session Chair**: Shawana Tabassum, PhD, *The University of Texas at Tyler* **Co-Chair:** Md Masud Rana, PhD, *The University of Texas at Tyler*	**Session 28:** Biomaterials I **Session Chair**: Melanie Ecker, PhD, *University of North Texas* **Co-Chair:** Narayan Bhattarai, PhD, *North Carolina A&T State University*	**Session 29:** Nanomedicine 2 **Session Chair**: Dustin Patterson, PhD, *The University of Texas at Tyler* **Co-Chair:** Jiyong Lee, PhD, *The University of Texas at Tyler*	**Session 30:** Biomedical Education/Research Training **Session Chair**: Joseph A. Cameron, *Jackson State University* **Co-Chair:** Xiaoshan "Judy" Gordy, *University of Mississippi Medical Center*
3:45	Effect of Nanomaterial Surface Morphology on the Sensing Performance of Agricultural VOC Sensors: A Review *A.K.M. Ahsanul Habib, Shawana Tabassum* *The University of Texas at Tyler*	**Keynote:** Liquid Crystal Elastomers: Artificial Muscles and Implantable Electronics *Taylor Ware,* *Texas A&M University, College Station*	**Keynote:** Nanomedicine for cancer therapy: from drug delivery to poorly vascularized tumors to protection from radiotherapy induced damage in the skin *Biana Godin,* *Houston Methodist Academic Institute*	**Keynote:** Biomedical and science education fields and the role of faculty in training the future generations of scientists *Jamil Ibrahim,* *University Medical Center of Southern Mississippi*
4:00	Doping Controlled Metal Halide Perovskite based Piezoelectric Energy Harvester for Self-powered Sensing *Md Rasidul Islam, Md Adil Hossain[2], Md Masud Rana[3]* *[1]Post Doctoral Fellow, Electrical and Computer Engineering, The University of Texas at Tyler, [2]Graduate Student, Electrical and Computer Engineering, The University of Texas ar Tyler, [3]Assistant Professor, Electrical and Computer Engineering, The University of Texas at Tyler*			
4:15	Chitosan-Hydrogel Supplements for Enhanced Plant Tolerance: A Computational Framework for Temperature-Triggered Water and Nutrient Release *Aneesh Karavadi[1], Rhythem Tahrin[2], Shawana Tabassum[2]* *[1]Centennial High School, Frisco, TX, [2]The*	Thiol-Clickable Gelatin-Based Hydrogels for 3D Cell Culture *Sara Swank, Melanie Ecker* *University of North Texas*	Self-Assembling Protein and Peptide Systems as Scaffolds for Drug Delivery, Nanomedicine, and Drug Discovery *Dustin Patterson* *University of Texas at Tyler*	Exploring Burnout and Turnover Intentions Among Nursing Faculty in Mississippi *Xiaoshan` Gordy, Angela Duck, Christy Savell, Margaret Calcote, Tawanda McNair, Xiaoqian Zhu* *University of Mississippi Medical Center*

	University of Texas at Tyler			
4:30	Development of pH-Responsive Hydrogels for Plant Stress Sensing Applications *Francisco Perez, Carla Lacerda, Shawana Tabassum* *The University of Texas at Tyler*	Advanced shape memory polymers: An additive manufacturing approach for next generation biomaterials *Melanie Ecker, Raj Kumar Pittala, Neha Pramod Davange* *University of North Texas*	Development of a Novel Microbubble Based Platform for Targeted Inhibition of Genes *Nazia Hafeez, Sina Khorsandi, Nicole McCuen, Adam Woodward, Ruoqi Gao, Shea Garland, Jacques Lux* *UT Southwestern Medical Center*	The Jackson Heart Study Undergraduate Training and Education Center: A 25 Year Success Story *Wendy White, Kisa Harris, Amel Mohamed* *Tougaloo College*
4:45	AI-Enhanced Opioid Detection with CGM Biosensors *Matthew Lucci[1], Kyle Walker[1, 2]* *[1]Runatek, [2]Sutter Health*	Zinc-Integrated PLGA/Chitosan Nanofiber Composites Meshes: Fabrication and Characterization for Potential Biomedical Applications *Dekonti Davies, Jagannathan Sankar, Narayan Bhattarai* *North Carolina A & T State University*	Microbubble-Mediated Intracellular Peptide Delivery via Bioreducible Bonds Shea Garland[1], Jacques Lux[1], Wen Jiang[2] [1]UT Southwestern Medical Center, [2]MD Anderson Cancer Center	Motivational Approaches, Outcomes, and Implications in Medical Education *Tim Dasinger* *University of Mississippi Medical Center*
5:00	AI-Enhanced Wearable Sensing Platform: Real-Time Physiological Monitoring and Nanogenerator Material Optimization for Self-Powered Operation *Md Adil Hossain, Mohammad Solaiman, Md Masud Rana, Shawana Tabassum* *The University of Texas at Tyler*	Coculture of HDFn and HUVECs on zinc-functionalized fibrous scaffolds *Sita Shrestha, Narayan Bhattarai, Niranjan Parajuli* *North Carolina A&T State University*	Development of Targeted Nanoparticles to Enhance Drug Delivery for Peripheral Arterial Disease Treatment *Na Nguyen, Vy Tran, Priyanka Iyer, Kytai Nguyen, Tam Nguyen* *University of Texas at Arlington*	A Laboratory Module for Differentiating Absorption, Scattering, and Fluorescence in UV-Vis Spectroscopy *Christopher Jurgenson[1], Dongmao Zhang[2], Pathum Wathudura[2], Huy Pham[2]* *[1]delta state university* *[2]Mississippi State University*
5:15	Organic-Inorganic Halide Perovskite and Bio-Based Energy Harvester for Sustainable Self-Powered Wireless Sensing *Md Masud Rana* *The University of Texas at Tyler*	Touch-Spun Microfiber Scaffolds: A Promising Platform For Tissue Engineering Applications *Kristina Peranidze, Mikhail Parker, Nataraja Yadavalli, Sergiy Minko, Vladimir Reukov* *The University of Georgia*	Convergence of 3D bioprinting, organoid, and MPS technologies in a pillar/perfusion plate *Moo-Yeal Lee[1], Soo-Yeon Kang[1], Sunil Shrestha[1], Prabha Acharya[1], Vinod Lekkala[1], Mona Zolfaghar[1], NaYoung Choi[1], Minseong Lee[1], Manav Vanga[2], Pranav Joshi[2]* *[1]University of North Texas* *[2]Bioprinting Laboratories Inc.*	Building Brains, Not Just Bodies: The Impact of Applying Constructivist Approaches in Gross Anatomy *Mais Abdelhaq* *University of Mississippi Medical center*
5:30				A Student-Led Approach to Building Research Skills Early in Medical Education Through a Medical Student Research Interest Group *Bailey Lupo, Wesley Jameson, Andrew Schwartz, Christian Quinones, Stanley Hoang, Deepak Kumbhare*

				Department of Neurosurgery, Louisiana State University Health Sciences Center, Shreveport
5:45				Learners as Teachers: Strategies for Peer Teaching from a Constructivist Perspective *Nathan Tullos* *University of Mississippi Medical Center*

Saturday Banquet Presentation

7:00 PM Subrata Saha Outstanding Speaker Event and Banquet

Catherine Ambrose, PhD, FORS
Department of Orthopaedic Surgery, UTHealth Houston, TX

Title: "The Support Within – What I have Learned from Bone Research"

END of Saturday

Sunday Morning Sessions

Topics Sunday	**Session 31:** Orthopaedics **Session Chair**: Giovanni Solitro, PhD, *Louisiana State University Health Shreveport* **Co-Chair:** Denis DiAngelo, PHD, *University of Tennessee Health Science Center*	**Session 33:** Biomaterials II **Session Chair**: Lamar Hamil, PhD, *University of Mississippi Medical Center* **Co-Chair:** Ken Butler, PhD, *University of Mississippi Medical Center*
8:30	Prediction of osteogenic differentiation of mesenchymal stromal cells by cell molecular signature *Qinqin Xu, Patrick Massey, Shane Barton, yufeng dong* *LSU Health-Shreveport*	Morphological Analysis of ARIP Cells in Response to Glucagon-Like Peptide-1 Exposure *Gary Hamil[1, 2], Hamed Benghuzzi[3], Michelle Tucci[2], Kenneth Butler[2]* *[1]Belhaven University* *[2]University of MS Medical Center* *[3]Jackson State University*
8:45	Relevance of Medial Wall Defects in Determining Acetabular Strength in Total Hip Arthroplasty: A Pilot Study on Bone Surrogates *Landyn Froberg, Steven Kautz, Shane Barton, Giovanni Solitro* *Louisiana State University Health Shreveport*	Interfacial molecular structure at biomembrane surfaces *Saranya Pullanchery* *Texas A & M University*
9:00	Quantification of Elbow Flexion in Overhead Throwing Motion: A Pilot Motion Capture Study on Non-professional Baseball Players *Anton Pelto, R. Shane Barton, Giovanni Solitro* *Louisiana State University Health Shreveport*	A Comparative Study of MCF-7 Tumor Cell Growth Using Agarose Seeding, Alginate Mixing, and 3D Bioprinting *Francisco Perez, Angel Perez, Shoukath Sulthana, Shawana Tabassum, Santosh Aryal* *The University of Texas at Tyler*
9:15	Use of Additive Manufacturing Tools to Improve the Design Process of Scoliosis Bracing Technology *CJ Rudolph, D, Kelly, M. Grossman, DJ DiAngelo* *University of Tennessee Health Science Center*	Influence of RGD in Elastin-Based Coatings on the Morphology and Differentiation of 3D Spheroids *Sheetal Chowdhury[1], Gene L. Bidwell[2], Joshua S. Speed[3], Amol V. Janorkar[1]* *[1]Department of Biomedical Materials Science University of Mississippi Medical Center, 2500 North State Street, Jackson, MS 39216* *[2]Department of Neurology University of Mississippi Medical Center, 2500 North State Street, Jackson, MS 39216.* *[3]Department of Physiology and Biophysics, University of Mississippi Medical Center, 2500 North State Street, Jackson, MS 39216*
9:30	Acromioclavicular Joint Reconstruction: A Biomechanical Comparison of a Novel Hybrid Suture Technique *Ben Chanes, Patrick Massey, Arjun Verma, Robert Rutz, Cameron Vauclin, James Robinson, Giovanni Solitro* *LSU Health Shreveport Department of Orthopaedic Surgery*	Magnesium Based Implants Applications in Animal Modules and Clinical Studies: A Narrative Review *Ali Sulaiman A. Al Yousef* *National University of Singapore*
9:45	Knee Gapping following Anteromedial Ligament Sectioning: a Kinematic Approach *Austin Thomassen, Lincoln Andre[1], Mason Granger, Robert*	Free Pioglitazone and Echogenic Pioglitazone-Loaded Liposomes Inhibit TGF-Beta-Mediated Conversion of Fibroblasts to Myofibroblasts, a Critical Step in Fibrosis Development *Melvin Klegerman, Tao Peng, Sarah Shin, Harry Karmouty-Quintana, David McPherson* *University of Texas Health Science Center at Houston*

	Rutz, Giovanni Solitro, Patrick Massey, Arjun Verma *LSU Health Shreveport* *Department of Orthopaedic Surgery*		
10:00			
10:15			
10:30-11:30	**Plenary** **Paolo Decuzzi**, PhD, Laboratory of Nanotechnology for Precision Medicine, Italian Institute of Technology, Genova (Italy) & Stanford University School of Medicine, Stanford (USA) (Visiting Professor) Title: Engineering Precision Therapies: A Multidisciplinary Approach to Hierarchically-Structured Drug Delivery Systems		
11:45	**Students Awards and Closing Ceremony**		

Thank you