



Southwestern Oklahoma State University
SWOSU Digital Commons

Oklahoma Research Day Abstracts

2018 Oklahoma Research Day

Mar 9th, 12:00 AM

08. Engineering

Southwestern Oklahoma State University

Follow this and additional works at: <https://dc.swosu.edu/ordabstracts>

Southwestern Oklahoma State University, "08. Engineering" (2018). *Oklahoma Research Day Abstracts*. 7.
<https://dc.swosu.edu/ordabstracts/2018oklahomaresearchday/mathematicsandscience/7>

This Event is brought to you for free and open access by the Oklahoma Research Day at SWOSU Digital Commons. It has been accepted for inclusion in Oklahoma Research Day Abstracts by an authorized administrator of SWOSU Digital Commons. An ADA compliant document is available upon request. For more information, please contact phillip.fitzsimmons@swosu.edu.

08 Engineering

05.08.01 ~ Low- and High-Dose Laser Irradiation Effects on Cell Migration and Destruction

Elivia Layton - University of Central Oklahoma
Kyra Gallagher - University of Central Oklahoma
Sara Zukerman - University of Central Oklahoma
Brianna Stevens - University of Central Oklahoma
Feifan Zhou - University of Central Oklahoma
Wei Chen - University of Central Oklahoma

05.08.03 ~ Biomechanical Characterization of Engineered Dermal-Equivalent Tissue

Erin Drewke - University of Central Oklahoma
Gang Xu - University of Central Oklahoma
Ting Wei Law - University of Central Oklahoma

05.08.04 ~ Smart Fluid Damping System for HVAC Equipment

Rachael McDaniel - University of Central Oklahoma
Andrew Matli - University of Central Oklahoma
Blake Obr - University of Central Oklahoma

05.08.05 ~ MOBILIZATION OF 3D PRINTING USING IN-SITU MATERIALS

Tiler Rose - Southwestern Oklahoma State University

05.08.06 ~ Quantifying Flagella-Driven Cellular Motility in Increased Medium Viscosity

Kara Clark - University of Central Oklahoma
Gang Xu - University of Central Oklahoma

05.08.07 ~ Design and Fabrication of Microfluidic Channels for Studies, Simulations, and the Replication of Arterial Blood Vessels

Phillip Le - University of Central Oklahoma
Kole Forrest - University of Central Oklahoma
Mohammad Hossan - University of Central Oklahoma

05.08.08 ~ Repair of F-16 Nose Landing Gear Bushing Bore

Floyd Day - University of Central Oklahoma
Ryan Short - University of Central Oklahoma
Cade Wells - University of Central Oklahoma
Jacob Pinegar - University of Central Oklahoma

05.08.09 ~ Simulation of Dedicated Short Range Communication using Simulation of Urban Mobility, Open Street Maps, and Network Simulator 3

Floyd Day - University of Central Oklahoma
Min Bo Sim - University of Central Oklahoma

05.08.10 ~ Countermeasures to Immune Dysregulation in Space Flight Conditions

Kameron Gibson - Langston University

05.08.11 ~ A Music Performance Analyze System

JACK LI - Southwestern Oklahoma State University

Joseph Rymer - Southwestern Oklahoma State University

05.08.12 ~ Design of an in-vitro model for testing stress distribution and stability of a single dental implant system

Mohamat Eirban Ali Bin Kaja Najumudeen - University of Central Oklahoma

Abdellah Ait Moussa - University of Central Oklahoma

Amy Neal - University of Central Oklahoma

Paul Nuno - University of Central Oklahoma

Danny Le - University of Central Oklahoma

05.08.13 ~ Development of a Procedure for Quantification of the Mechanical Properties of Chordae Tendineae of the Atrioventricular Heart Valves

Colton Ross - University of Oklahoma

Chung-Hao Lee - University of Oklahoma

Yi Wu - University of Oklahoma

05.08.14 ~ Laser Sentry for Portable Radiographic Safety

Maesynne Hulseay - University of Central Oklahoma

Kristina Benton - University of Central Oklahoma

Kara Clark - University of Central Oklahoma

05.08.15 ~ Metamaterials-Inspired Smart Composite

James Manimala - Oklahoma State University

Vigneshwaran Krishnamurthy - Oklahoma State University

Jiameng Wang - Oklahoma State University

Timothy Emerson - Oklahoma State University

05.08.16 ~ Amplitude-Activated Mechanical Wave Manipulation Using Nonlinear Metamaterials

James Manimala - Oklahoma State University

Sabiju Valiya, Valappil - Oklahoma State University

Catherine Sheehan - Oklahoma State University

05.08.17 ~ Dynamic Characterization of Inertant and Quasi-Inertant Structures

James Manimala - Oklahoma State University

Karthik Madhamshetty - Oklahoma State University

05.08.18 ~ EFFECT OF LASER MICRO-GROOVING ON TITANIUM IMPLANT

Anindita Das - University of Central Oklahoma

Morshed Khandaker - University of Central Oklahoma

05.08.19 ~ DETECTION AND IMPACT OF 3-D ROUGHNESS ON PGE-M PROTEIN IMMOBILIZATION

Anindita Das - University of Central Oklahoma

Mohammad Hossan - University of Central Oklahoma

05.08.20 ~ An Examination of the Mechanical Properties and Morphology of Porcine Mitral and Tricuspid Heart Valves

Samuel Jett - University of Oklahoma

Devin Laurence - University of Oklahoma

Katherine Kramer - University of Oklahoma

Anju Babu - University of Oklahoma

Yi Wu - University of Oklahoma

Chung-Hao Lee - University of Oklahoma

05.08.21 ~ OCT-Based Tissue Microindentation for Mechanical Characterization of Fibroblast-Populated Collagen Lattices

Zheng Yie Yap - University of Central Oklahoma

Chen Wai Kok- University of Central Oklahoma

Kristen Stromsodt - University of Central Oklahoma

Gang Xu - University of Central Oklahoma

Mel Vaughan - University of Central Oklahoma

05.08.22 ~ Enhanced Learning for STEM Students: Using the Think Aloud Cognitive Process

Tiara Travis - University of Central Oklahoma

05.08.25 ~ Solar Powered Smart Street Lights

Shi Rui Yeoh - University of Central Oklahoma

Ka Hei Chan - University of Central Oklahoma

Nesreen Alsobou - University of Central Oklahoma

05.08.26 ~ A Smart Parking System using ARTIK Cloud

Mohamed Afify- University of Central Oklahoma

Floyd Day- University of Central Oklahoma

Nesreen Alsobou - University of Central Oklahoma

05.08.27 ~ 3D Lung Motion Platform Detection Device Using a Flexible Wireless Sensor Network

Amjad barghouthi - University of Central Oklahoma

Mohamed Afify- University of Central Oklahoma

Nesreen Alsobou - University of Central Oklahoma

05.08.28 ~ Mobility Modeling for Smart Parking

Mohamed Rishad Abdul Samad - University of Central Oklahoma

Nesreen Alsobou - University of Central Oklahoma

Mohammed Alhashem - University of Central Oklahoma

05.08.29 ~ Self-Powered Enlarging Smart Waste Bin

Mohamed Rishad Abdul Samad - University of Central Oklahoma

Nesreen Alsbou - University of Central Oklahoma

Alaeddin Abuabed - University of Central Oklahoma

Mohammed Alhashem - University of Central Oklahoma

05.08.30 ~ Numerical modeling and parametric study of laser ablation for fabrication in microfluidics

Matt Benton - University of Central Oklahoma

Mohammad Hassan - University of Central Oklahoma

05.08.31 ~ Effect of electric field on microfluidic cell manipulations

amelie Moyna - University of Central Oklahoma

05.08.32 ~ Effect of electric field on microfluidic cell manipulations

amelie Moyna - University of Central Oklahoma

Phillip Le - University of Central Oklahoma

Mohammad Hassan - University of Central Oklahoma

Mel Vaughan - University of Central Oklahoma

05.08.33 ~ Guidewire Detection in X-ray Fluoroscopy Images using Hessian Analysis

Yuhao Jiang - University of Central Oklahoma

Kushal Thapa - University of Central Oklahoma

05.08.34 ~ An Integrated Experimental-Computational Framework for Multiscale Modeling of Atrioventricular Heart Valves

Devin Laurence - University of Oklahoma

Yi Wu - University of Oklahoma

Chung-Hao Lee - University of Oklahoma

05.08.35 ~ Microfluidic Research

Jon Kamies - University of Central Oklahoma

05.08.36 ~ Layer-Specific Mechanical Responses and Morphological Structure of the Atrioventricular Valve Leaflets

Katherine Kramer - University of Oklahoma

Anju Babu - University of Oklahoma

Chung-Hao Lee - University of Oklahoma

Yi Wu - University of Oklahoma

05.08.37 ~ Campus Accessibility Map- Campus Navigation Map for People with Limited Mobility

Seth Howell - University of Central Oklahoma

Jicheng Fu - University of Central Oklahoma

05.08.38 ~ Design and Manufacturing of Bone Analogue models for the Mechanical Testing of Custom Medical Implants

Dakota Andrus - University of Central Oklahoma

Abdellah Ait Moussa - University of Central Oklahoma

Taylor Reed - University of Central Oklahoma

Brent Harrell - University of Central Oklahoma

Eric Hight - University of Central Oklahoma

Karidjatou Cisse - University of Central Oklahoma

05.08.39 ~ Design and Manufacturing of Bone Analogue models for the Mechanical Testing of Custom Medical Implants

Dakota Andrus - University of Central Oklahoma

Abdellah Ait Moussa - University of Central Oklahoma

05.08.40 ~ Automated Seizure Detection Device

Abdulelah Babhair - University of Central Oklahoma

Ali Almomen - University of Central Oklahoma

05.08.41 ~ Nanofiber production and Collecting Machine

Mohamed Rishad Abdul Samad - University of Central Oklahoma

Lokesh Raj Dhanasekaran - University of Central Oklahoma

Trenton Ellis - University of Central Oklahoma

Garrett Lorah - University of Central Oklahoma

Morshed Khandaker - University of Central Oklahoma

05.08.42 ~ Quantifying and Simulating Cancer Patient Lung Motion in CT Using Deformable Phantom

Allie Sikes - University of Central Oklahoma

Ali AlMasbah - University of Central Oklahoma

Lohitha Wickramasinghe - University of Central Oklahoma

Shuruq AlMuwallad - University of Central Oklahoma

Nesreen Alsbou - University of Central Oklahoma

Alaeddin Abuabed - University of Central Oklahoma

05.08.43 ~ Automated Vertical Garden

Howee Chong - University of Central Oklahoma

05.08.44 ~ KC-135 AFT Trunnion Support Seized Fastener Improved Removal Equipment and Methods

Norris Dupre - University of Central Oklahoma

Dennis Williams - University of Central Oklahoma

05.08.45 ~ Experimental and numerical analysis of electrospun fiber anchored silicone intervertebral disc

Subhakar Tummala - University of Central Oklahoma

Morshed Khandaker - University of Central Oklahoma

05.08.46 ~ Radio Waves to Electricity: Tesla's Blueprint

Sean Jesse - East Central University

05.08.47 ~ Dielectrophoresis Effects on Cell Viability in Various Sugar Solutions

Nicholas Walker - University of Central Oklahoma

Mel Vaughan - University of Central Oklahoma

Mohammad Hassan - University of Central Oklahoma

05.08.48 ~ Effect of titanium surface activation by Tresyl chloride on fibronectin immobilization and cell viability

Sadegh Nikfarjam - University of Central Oklahoma

Morshed Khandaker - University of Central Oklahoma

05.08.49 ~ Investigation on the Essential Role of Glycosaminoglycans in Heart Valve Leaflet Biomechanics

Jacob Richardson - University of Oklahoma

Anju Babu - University of Oklahoma

Chung-Hao Lee - University of Oklahoma

Yi Wu - University of Oklahoma

05.08.50 ~ Untitled

Roberto Santana - University of Central Oklahoma

05.08.51 ~ Wind Power Energy Capture

Roberto Santana - University of Central Oklahoma

Brandon Ross - University of Central Oklahoma

Brent Gaddis - University of Central Oklahoma

Gaddis - University of Central Oklahoma

Spencer Prudhomme - University of Central Oklahoma

05.08.52 ~ American Sign Language Translation Glove

Nam Truong - University of Central Oklahoma

Vlado Bilix - University of Central Oklahoma

Hieu Le - University of Central Oklahoma

05.08.53 ~ Cellular Responses Induced by Plasma and Cellular Fibronectin on Electrospun Nanofiber Membranes

Fariha Sultana - University of Central Oklahoma

Melville Vaughan - University of Central Oklahoma

Morshed Khandaker - University of Central Oklahoma

05.08.54 ~ Synthesis and Characterization of Aliphatic Urethane Shape Memory Polymers for Endovascular Embolization of Intracranial Aneurysms

Robert Kunkel - University of Oklahoma
Donnie Robinson - University of Oklahoma
Devin Laurence - University of Oklahoma
Joshua Scherrer - University of Oklahoma
Jingyu Wang - University of Oklahoma
Bradley Bohnstedt - University of Oklahoma
Yingtao Liu - University of Oklahoma
Chung-Hao Lee - University of Oklahoma

05.08.55 ~ Modeling and Simulation of Mixing in a Microfluidic Channel

Jefferson Hall - University of Central Oklahoma
Evan Lemley- University of Central Oklahoma
Mohammad Hossan - University of Central Oklahoma
Floyd Day- University of Central Oklahoma
Jon Kamies - University of Central Oklahoma

05.08.56 ~ Experimental Determination of Pressure Drop and Flow Field in Model Human Trachea

Mohamad keblawi - University of Central Oklahoma

05.08.57 ~ A Study on the Regional Variation in Mitral and Tricuspid Valve Material Properties

Cortland Johns - University of Oklahoma
Samuel Jett - University of Oklahoma
Colton Ross - University of Oklahoma
Jacob Richardson - University of Oklahoma
Yi Wu - University of Oklahoma
Chung-Hao Lee - University of Oklahoma

05.08.58 ~ Solid Stance: A Standing Assistance Aid for Physical Therapy Offices

Nneka Omeke - University of Central Oklahoma
Bassem Alabadi - University of Central Oklahoma
Dr. Charles Hughes - University of Central Oklahoma
Dr. Ronald Miller - University of Central Oklahoma
Alaa Alsalem - University of Central Oklahoma

05.08.59 ~ Interleaved Sampling for Hearing Loss

Zaher Alghamdi - University of Central Oklahoma
Ammar Alzuwaid- University of Central Oklahoma
Haidar Alqanbar - University of Central Oklahoma
Haidar Alqanbar - University of Central Oklahoma
Haidar Alqanbar - University of Central Oklahoma

05.08.60 ~ Physiological Monitoring System

Jacob Harris - University of Central Oklahoma

Sergey Antonyukov- University of Central Oklahoma

Josiah Harrison - University of Central Oklahoma

Mohammad Khaled - University of Central Oklahoma

05.08.61 ~ Hypothesis Study

Paul Cook- University of Central Oklahoma

05.08.62 ~ Cold Compression Therapy Wrap

Moaiid Almosalim - University of Central Oklahoma

Musalam Alshugaih - University of Central Oklahoma

Ali Alnakhli - University of Central Oklahoma

05.08.63 ~ Development of a biomimetic nanofiber-based anterior cruciate ligament for reconstructive surgeries

Austin Doughty- University of Central Oklahoma

Mika Barnes - University of Central Oklahoma

Bipin Pallipparambil Varghese - University of Central Oklahoma

Mel Vaughan - University of Central Oklahoma

Morshed Khandaker - University of Central Oklahoma