AGENDA

8:00–9:00 AM  REGISTRATION
CONCOURSE /
N. AUXILIARY GYM
REGISTRATION
CONTINENTAL BREAKFAST
POSTER SET-UP
Please check in at the registration table on the ground floor, outside the Concourse. Poster set-up takes place in the Breslin Concourse. Breakfast is available in the North Auxiliary Gymnasium.

9:00–9:15 AM  WELCOME
N. AUXILIARY GYM
WELCOME
Dr. Judith Stoddart, Interim Dean, MSU Graduate School

9:15–10:45 AM  FITCH H. BEACH RESEARCH AWARD NOMINEE
PRESENTATIONS

10:45–11:00 AM  BREAK

11:00 AM–NOON  RESEARCH POSTER SESSION A
CONCOURSE
RESEARCH POSTER SESSION A
Authors will be available to discuss research posters from Biosystems Engineering, Chemical Engineering, Materials Science, and Mechanical Engineering

NOON–1:00 PM  RESEARCH POSTER SESSION B
CONCOURSE
RESEARCH POSTER SESSION B
Authors will be available to discuss research posters from Civil Engineering, Computer Science, Electrical Engineering, and Environmental Engineering

1:00–2:30 PM  POSTER CLEAN-UP
LUNCH
CAREER CONNECTIONS

2:30–3:00 PM  AWARDS CEREMONY
N. AUXILIARY GYM
Fitch H. Beach Award Nominees

This endowed award, established by Janet M. Beatty in honor of her uncle, recognizes the most outstanding graduate researchers within the College of Engineering. Each department nominates one PhD student, and awards are based on a review of students’ academic and professional records and on an oral presentation of their research. Awardees receive stipends, a certificate, and a medal to be worn at graduation.

The following students have been nominated by their departments and will present their research at the Symposium.

- **Zhiguo Liu (BAE)**: An Integrated Process to Upgrade Biogas, Reclaim Wastewater, and Reutilize Solid Residues: Magnifying Sustainability of Anaerobic Digestion
- **Caitlin Kowalsky (CHEMS)**: Rapid High-Throughput Fine Conformational Epitope Mapping
- **Emily Tummons (CEE)**: Oil Droplet Behavior at the Membrane Surface During Crossflow Filtration
- **Joseph Roth (CSE)**: Human Sensing for Biometrics
- **Shreya Nad (ECE)**: Synthesis and Analyses of Single Crystal Diamond Substrates for Optical and Electronic Applications
- **Byron Zambrano (ME)**: The Role of Hemodynamics on Intraluminal Thrombus Accumulation and Abdominal Aortic Aneurysm Expansion

MSUFCU Research Translation Award

This competition, funded by a grant from the MSU Federal Credit Union, seeks to inspire students to think about commercial applications of their research and develop research posters that clearly communicate this potential, and to spark conversations and make connections between students, projects, and potential industry collaborators. A committee of judges drawn from industry representatives will review research posters submitted to the Engineering Graduate Research Symposium and select two winners; the first-place awardee will receive $2,000 and the second-place awardee will receive $500.
Outstanding Graduate Student Awards

This award recognizes the most outstanding graduate student in each program, as selected by the faculty within the department. Recipients receive a stipend, certificate, and a medal to be worn at graduation. The 2015–16 Outstanding Graduate Students are listed below.

- **Yingqian Lin**, Biosystems Engineering (Advisor: Fei Pan)
- **Caitlin Kowalsky**, Chemical Engineering (Advisor: Timothy Whitehead)
- **Mohanned Naser**, Civil Engineering (Advisor: Venkatesh Kodur)
- **Joseph Roth**, Computer Science (Advisor: Xiaoming Liu)
- **Bin Fan**, Electrical Engineering (Advisor: Wen Li)
- **Fernanda Paes Wilson**, Environmental Engineering (Advisor: Alison Cupples)
- **Chen Zhang**, Materials Science (Advisor: Thomas Bieler)
- **Ali Al-Jiboory**, Mechanical Engineering (Advisor: Guoming Zhu)

The DewGood Public Service Technology Award

This competition, funded by a grant from Dewpoint, encourages students to think about the broader impacts of their research and develop posters that clearly communicate the potential of their research to serve the public good. A committee of judges drawn from industry representatives will review research posters submitted to the Engineering Graduate Research Symposium and select two winners; the first-place awardee will receive $350 and the second-place awardee will receive $150.
Research Posters

More than 225 graduate students, representing all nine programs in our six Engineering departments, will present research posters at the Symposium. This program lists poster titles, numbers, and authors by department; complete abstracts are available online and QR codes are provided for easy access to the abstracts from each program.

Within the Breslin Concourse, posters are arranged by department, starting from the ticket lobby entrance. See map for more details.
Welcome Speaker

Judith Stoddart is serving as interim Associate Provost for Graduate Education and Dean of the Graduate School at Michigan State for 2015–16. She has been an Associate Dean in the Graduate School since 2011, Assistant Dean (2007–2010), and director of the University Fellowship Programs since 2002.

As co-PI and project director at MSU for the Council of Graduate Schools Ph.D. Completion Project and for the ETS/CGS Award for Innovation in Promoting Success in Graduate Education, Dr. Stoddart has worked with graduate programs across MSU and with national partners on initiatives to improve doctoral student recruitment, mentoring, and career and professional development. She was recently named to the steering committee for the CIC/ACM Mellon Undergraduate and Faculty Fellows Program for a Diverse Professoriate, a seven-year, $8.1 million grant focused on preparing underrepresented students in the humanities, humanistic social sciences, and the arts for graduate study and helping them transition into faculty careers.

Dr. Stoddart served on the MSU Provost’s Task Force on Graduate Student Mentoring and Research, which wrote the Guidelines for Graduate Student Advising and Mentoring Relationships and the Guidelines for Integrity in Research and Creative Activities. She is a certified mediator in the University Mediation Center, and a part of the Graduate School Conflict Resolution training team which has provided workshops to faculty and graduate students at universities across the country.

Dr. Stoddart was a Rhodes Scholar at Oxford, where she received an M.Phil and D.Phil in English. She has published on 19th-century theories of nationalism, aesthetic theory, and visual culture. Dr. Stoddart was the associate chair and graduate program director in the MSU English Department for four years. Her graduate and undergraduate teaching have been recognized by departmental and university awards.
Multiscale Spatial and Temporal Climate Change Impact Assessment on Water Resources in Malawi

BAE-01 Umesh Adhikari, A. Pouyan Nejadhashemi, Matthew R. Herman

A Traditional Ground-Based System for Woody Biomass Harvesting in Short Rotation Woody Crops (SRWC) Plantations

BAE-02 Zachary Carter, Fei Pan, Yingqian Lin, Raymond Miller, Ajit Srivastava

Modeling the Effect of Product Temperature, Moisture, and Process Humidity on Thermal Inactivation of Salmonella in Pistachios

BAE-03 Kaitlyn Casulli, Francisco Garces-Vega, Kirk Dolan, Linda Harris, Bradley Marks

An Evaluation of the Influenza Risk Reduction from Antimicrobial Spray Application of Porous Surfaces

BAE-04 Alexandre Chabrelie, Jade Mitchell, Joan Rose, Duane Charbonneau, Yoshiki Ishida

Sensitivity Analysis of Climate Change Impact on Macroinvertebrate Communities in the Saginaw River Watershed

BAE-05 Fariborz Daneshvar, A. Pouyan Nejadhashemi, Mohammad Abouali, Matthew R. Herman

Drought Impacts and Stream Ecosystem Functions

BAE-06 Elaheh Esfahanian, A. Pouyan Nejadhashemi, Mohammad Abouali, Fariborz Daneshvar, Alireza Ameli Renani, Matthew R. Herman, Ying Tang

Evaluation of Water Content as a Convenient Metric in Thermal Inactivation Modeling for Low-Moisture Foods

BAE-07 Francisco J. Garces-Vega, Bradley P. Marks
Electrocatalytic Upgrading of Lignin Model Compounds Using Ruthenium on Activated Carbon Cloth to Produce Liquid Fuel Intermediates

Mahlet Garedew, Leonardo Sousa, James E. Jackson, Christopher M. Saffron

Using an Evolutionary Algorithm to Optimize Bioenergy Crop Selection and Placement Based on Stream Health

Matthew Herman, Pouyan Nejadhashemi, Fariborz Daneshvar, Mohammad Abouali, Dennis Ross, Sean Woznicki, Zhen Zhang

Detection of Fresh Bruises in Apples Using Structured-Illumination Reflectance Imaging

Richard Li, Renfu Lu

Moisture Equilibration and Product Fabrication Methods Affect Measured Thermal Resistance of *Salmonella Enteritidis* PT30 on/in Whole Almonds, Almond Meal, and Almond Butter

Pichamon Limcharoenchat, Michael James, Nicole Hall, Bradley Marks

Willow Harvesting Using a Small-Scale System in Michigan

Yingqian Lin, Fei Pan

Rapid Detection of Pathogenic Bacteria Using Affixed Carbohydrate-Functionalized MNP and Cyclic Voltammetry Detection

Leann Lerie Matta, Evangelyn C. Alocilja

Pasture Diversification to Combat Climate Change Impacts on Grazing Dairy Production

M. Melissa Rojas-Downing, A. Pouyan Nejadhashemi, Mohammad Abouali, Fariborz Daneshvar, Sabah Anwer Dawood Al Masraf, Matthew Herman, Timothy Harrigan, Zhen Zhang

Biomass Conversion to Hydrocarbon Fuels by Pyrolysis and Electrocatalysis

Rachael Sak, Christopher Saffron, Matt Brusstar, Sharyn Lie, Bob Larson

Scalability of a Discrete Element Model for Salmonella Cross-Contamination in Granular Low Water Activity Foods

Quincy Suehr, Bradley Marks, Elliot Ryser, Sanghyup Jeong
Synthesis of Biobased Polyols from Soymeal and Its Application in Polyurethane Rigid Foam

**CHE-01** Sayli Bote, Daniel Graiver, Ramani Narayan

Toughening of Carbon Fiber–Reinforced Epoxy Polymer Composites Utilizing Fiber Surface Treatment and Sizing for Aerospace and Automotive Applications

**CHE-02** Markus Downey, Lawrence Drzal

Transport Limitations in Nanoscale Scaffolds for Multistep Catalytic Reactions

**CHE-03** Erica Earl, Scott Calabrese Barton

Using Protein Design to Evaluate the Relationship Between Protein Surface Potential and Lignin Adsorption for the Discovery of Cellulases with Reduced Lignin Binding

**CHE-04** Carolyn Haarmeyer, Matthew Smith, Shishir Chundawat, Deanne Sammond, Timothy Whitehead

Investigating High Density Polyethylene–Graphene Nanoplatelet Composites for the Production of Fuel Lines and Fuel Tanks

**CHE-05** Keith Honaker, Frederic Vautard, Lawrence Drzal

Nanoscale Toughening of Carbon Fiber/Epoxy Composites Modified with a Self-Assembling Block Copolymer

**CHE-06** Nicholas T. Kamar, Lawrence T. Drzal

Rapid Fine Conformational Epitope Mapping Using Comprehensive Mutagenesis and Deep Sequencing

**CHE-07** Caitlin Kowalsky, Timothy Whitehead

Effects of Low Dimensionality on Properties of Thermoelectrics

**CHE-08** Shannon Kraemer, Winston Carr, Jared Williams, Donald Morelli, Viktor Poltavets
Efficient TiO$_2$ Photocatalytic Films Made with Micro/Nano-Fibrillated Cellulose Templating

**CHE-09** Yan Li, Lawrence T. Drzal

Thinner and Stronger Microporous Membranes for Batteries by Die Drawing

**CHE-10** Xinting Lin, K. Jayaraman

Molecule Dynamics Simulation on Substrate Transport on Alpha-Helix Peptide for Multistep Catalysis

**CHE-11** Yuanchao Liu, Scott Calabrese Barton

Design and Synthesis of Polydimethylsiloxane Polyester Polyol that Contains Biobased Content for Polyurethane Foam Applications

**CHE-12** Hugh MacDowell, Ramani Narayan

Phosphorescent Inorganic Nanoclusters: A New Paradigm for Light-Emitting Diode Emitters

**CHE-13** Padmanaban S Kuttipillai, Yimu Zhao, Christopher J. Traverse, Richard J. Staples, Benjamin G. Levine, Richard R. Lunt

Thermally-Induced Stress Behavior of Single Crystal Sapphire–Single Crystal Yttria-Stabilized Zirconia Bilayers

**CHE-14** Eric M. Straley, Jason D. Nicholas

Novel Biobased Elastomers by Reactive Blending of Modified Natural Oil and Polysiloxanes

**CHE-15** Tambe Chetan, Daniel Graiver, Ramani Narayan

Engineering Delivery Vehicles for siRNA Therapeutics

**CHE-16** Daniel Vocelle, Olivia M. Chesniak, Milton R. Smith III, Christina Chan, S. Patrick Walton

Effects of Deck Composition in the Separation of Double Decker Polyhedral Oligomeric Silsesquioxanes Cis/Trans Isomers

**CHE-17** David Vogelsang, Robert Maleczka Jr., Andre Lee

Plasmid-Based Single-Pot Saturation Mutagenesis

**CHE-18** Emily E. Wrenbeck, Justin R. Klesmith, James A. Stapleton, Adebola Adeniran, Keith E. J. Tyo, Timothy A. Whitehead
Influence of Electrolyte Conditions on the Electrochemical Behavior of Cu(Pd)-Al IMCs in Wire Bonding Packages

Yuelin Wu, K.N. Subramanian, Andre Lee

Understanding Sugar Yield Loss and Enzyme Inhibition Due to Oligosaccharides Accumulation during High Solids-Loading Enzymatic Hydrolysis

Saisi Xue, Nirmal Uppugundla, Michael Bowman, Shishir Chundawat, Brian Fox, David Cavalier, Mingjie Jin, Leonardo da Costa Sousa, Bruce Dale, Venkatesh Balan

Graphene Nanoplatelet Films as an Electrostatic Actuator

Zeyang Yu, Lawrence Drzal

Synthesis, Characterization, and Assessment of a Fibrous MnOx Catalytic Film Formed on Fto by Dual-Session Cyclic Voltammetry

Hao Yuan, Richard Lunt, Gary Blanchard, Robert Ofoli

Civil Engineering

Influence of Temperature-Induced Bond Degradation on Fire Resistance of RC Beams

Ankit Agrawal, Venkatesh Kodur

Utilizing Indigenous Materials for Building Construction

Areej Almalkawi, Parviz Soroushian

Performance of Reinforced Concrete Columns under Hydrocarbon Fire Exposure

Saleh Alogla, Venkatesh Kodur

Analytical Solution to Earthquake-Induced Nonlinear Inelastic Second-Order Moments in Slender Reinforced Concrete Bridge Columns

Ata Babazadeh, Rigoberto Burgueño
Impact of Pavement Structural Response on Rolling Resistance and Vehicle Fuel Economy

**CE-05** Danilo Balzarini, Imen Zaabar, Karim Chatti

Performance of Fiber-Reinforced Polymer-Strengthened Reinforced Concrete Slabs Subjected to Fire

**CE-06** Pratik Bhatt, Venkatesh Kodur

Splitting Tensile Strength of Ultra-High-Performance Concrete at Elevated Temperature

**CE-07** Xu Dong, Venkatesh Kodur

Behavior of Composite Beam-to-Box Column Connection in Steel Buildings

**CE-08** Mohammadreza Eslami, Venkatesh Kodur, Hisashi Namba

Developing Safety Performance Functions for Roundabouts Located in the State of Michigan

**CE-09** Ahmad M. Fawaz, Timothy Gates

Grace-Based Evaluation of Terrestrial Water Storage Variations Simulated by a Global Land Surface Model with Human Impacts

**CE-10** Farshid Felfelani, Yadu Pokhrel

Nondestructive Condition Assessment of Concrete Structure Using NMR

**CE-11** Iman Harsini, Parviz Soroushian

Implementation of a Decision Framework for Corridor Planning within the Roadside Right-of-Way for Non-Traditional Developments

**CE-12** Gentjan Heqimi, Timothy Gates, Adam McArthur

Location Sensitive Snow Effects on Interstate Highway Crashes

**CE-13** Gentjan Heqimi, Timothy Gates

Bending Rigidity of Twisted Fibers

**CE-14** Ali Imani Azad, Roozbeh Dargazany

Control of Post-Buckling Response of Non-Uniform Beams for Energy Harvesting Applications

**CE-15** Pengcheng Jiao, Wassim Borchani, Nizar Lajnef
Hydrologic Modeling of Groundwater Recharge in the Ottawa County, Michigan
CE-16 Guoting Kang, Phanikumar Mantha

Mechanics-Based Service-Life Prediction of Elastomeric Nano-Composites
CE-17 Leila Kahlili, Roozbeh Dargazany

Combined Effect of SBS and Recycled Tire Rubber (RTR) Modification on Performance Grade and Fatigue Cracking Resistance
CE-18 Salih Kocak, M.Emin Kutay

A Rational Design Approach for Evaluating Fire Resistance of Concrete-Filled Hollow Steel Columns
CE-19 V.K.R. Kodur, K. Ramya, K. Puneet

Thermo-Mechanical Modeling of Load Bearing Reinforced Concrete Walls Subjected to Fire Exposure
CE-20 Puneet Kumar, V.K.R. Kodur

Investigation of Effect of Compaction Characteristics on Performance of Asphalt Mixtures
CE-21 Yogesh Kumbargeri, Michele Lanotte, M. Emin Kutay

Feasibility of Quasi-Static Characterization Method for Dynamic Behavior of Liquid Nanofoam
CE-22 Mingzhe Li, Weiyi Lu

Elastic Postbuckling Response of Bilaterally Constrained Non-Prismatic Columns
CE-23 Suihan Liu, Rigoberto Burgueño

Value-Added Use of Carbon Dioxide for Production of a New Class of Sustainable Hydraulic Cements
CE-24 Faris Matalkah, Parviz Soroushian

Comparative Behavior of Fire-Exposed Composite Girders Subjected to Flexural and Shear Loading
CE-25 Mohannad Naser, Venkatesh Kodur

Analysis of Water Quality, Water Scarcity, and Leading Factors to Using Contaminated Water Sources in Rural Communities
CE-26 Tula Ngasala, Susan Masten, Phanikumar Mantha
Development of an Acceptance Test for Chip Seal Project

**CE-27** Ugurcan Ozdemir, M. Emin Kutay

Freezing and Thawing of Frost-Susceptible Soils (Development of a Reliable Predictive Model)

**CE-28** Pegah Rajaei, Gilbert Baladi

Pavement Surface Characterization for Optimization of Trade-Off Between Grip and Rolling Resistance

**CE-29** Shabnam Rajaei, Roozbeh Dargazany, Karim Chatti

A Pattern Recognition Approach Based on Image Data Analysis for Structural Damage Detection with Discrete Binary Data

**CE-30** Hadi Salehi, Saptarshi Das, Shantanu Chakrabartty, Subir Biswas, Rigoberto Burgueño

Characterizing Properties of Ultra-High-Performance Concrete (UHPC) at Elevated Temperatures

**CE-31** Mahmood Ahmad Sarwar, Venkatesh Kodur

Development of a Continental-Scale Land Hydrology Model with Human Impacts for North America

**CE-32** Sanghoon Shin, Yadu Pokhrel

Multi-Gene Genetic Programming Approach for the Prediction of Crumb Rubber Modified (CRM) Binder Viscosity

**CE-33** Sepehr Soleimani, Michele A. Lanotte, M. Emin Kutay

Flexural Behavior of Ultra-High-Performance Fiber-Reinforced Concrete Beams

**CE-34** Roya Solhmirzaei, Venkatesh Kodur

Prediction of Pedestrian Crashes at Midblock Crossing Areas Using Site and Behavioral Characteristics

**CE-35** Steven Stapleton, Timothy Gates

Thermal, Electrical, and Structural Behavior of “Reversible Bonded” Composite Joints

**CE-36** Suhail Hyder Vattathurvalappil, Mahmoodul Haq, Ermias G. Koricho, Lawrence T. Drzal
Impacts of Maintenance Treatments on the Life Cycle Pavement Condition and Distress of the LTPP SPS-3 Test Sections

CE-37  Gopikrishna Musunuru, Gilbert Baladi

Computer Science

A High-Performance Block Eigensolver for Nuclear Configuration Interaction Calculations

CSE-01  Md Afibuzzaman, Hasan Metin Aktulga

Intelligent and Automatic Quantification of in vivo Cells in MRI

CSE-02  Muhammad Afridi, Steven Hoffman, Arun Ross, Xiaoming Liu, Erik Shapiro

A Machine-to-Machine Outsourcing Approach to Monitoring Quality of Experience for Operational Cellular Networks

CSE-03  Faraz Ahmed, Jeffrey Erman, Zihui Ge, Alex X. Liu, Jia Wang, He Yan

Epileptic Seizure Inference

CSE-04  Atra Akandeh, Fathi Salem

Keystrokes Recognition Using Wi-Fi Signals

CSE-05  Kamran Ali, Alex X. Liu, Wei Wang, Muhammad Shahzad

WiGesture: Facial Gesture Recognition Using WiFi Signals

CSE-06  Salman Ali, Kamran Ali, Alex X. Liu, Wei Wang

Livestock Detection and Tracking in the Thermal Spectrum

CSE-07  Aaron Gonzales, Arun Ross

Automated Detection and Tracking of a Trailers Coupler

CSE-08  Yousef Atoum, Joseph Roth, Xiaoming Liu

Automated Online Exam Proctoring

CSE-09  Yousef Atoum, Liping Chen, Alex Liu, Stephen Hsu, Xiaoming Liu
Which Camera Did This Iris Image Come From?

CSE-10 Sudipta Banerjee, Arun Ross

Stochastic Convex Sparse Principle Component Analysis

CSE-11 Inci M. Baytas, Kaixiang Lin, Fei Wang, Jiayu Zhou, Anil K. Jain

Face Image Quality for Automatic Face Recognition

CSE-12 Lacey Best-Rowden, Anil K. Jain

Exploring Sex Prediction from a Near-Infrared Iris Image

CSE-13 Denton Bobeldyk, Arun Ross

FingerprintMash: Latent Fingerprint Value Determination by Expert Crowdsourcing

CSE-14 Tarang Chugh, Kai Cao, Anil K. Jain

Exploring Spatial Skills of Introductory Programming Students

CSE-15 Sarah Coburn, Mark Urban-Lurain

The Forge: Building Efficient Packet Classifiers

CSE-16 James Daly, Eric Torng

A Bayesian Belief Fusion Framework for Integrating Match Scores with Auxiliary Information in Fingerprint Verification Systems

CSE-17 Yaohui Ding, Ajita Rattani, Arun Ross

The Effects of Evolution and Spatial Structure on Diversity in Biological Reserves

CSE-18 Emily Dolson, Michael Wiser, Charles Ofria

Causality of Verbs for Grounded Language Understanding

CSE-19 Qiaozi Gao, Malcolm Doering, Shaohua Yang, Joyce Chai

Mapping the Genomic Architecture of Adaptive Traits with Interspecific Introgressive Origin

CSE-20 Hussein Hejase, Kevin Liu

Towards a Truthful Online Spectrum Auction with Dynamic Demand and Supply

CSE-21 Chowdhury Hyder, Thomas Jeitschko, Li Xiao

Large-Pose Face Alignment via CNN-Based Dense 3D Model Fitting

CSE-22 Amin Jourabloo, Xiaoming Liu
The Evolutionary Origins of Phenotypic Plasticity

CSE-23 Alexander Lalejini, Charles Ofria

Multi-Task Feature Interaction Learning

CSE-24 Kaixiang Lin, Jianpeng Xu, Shuiwang Ji, Jiayu Zhou

Inter-Femtocell Interference Identification and Resource Management

CSE-25 Chin-Jung Liu, Pei Huang, Li Xiao

Model Repair

CSE-26 Mohammad Roohitavaf, Sandeep Kulkarni

Network-Aware Task Scheduling in Data Centers

CSE-27 Ali Munir, Alex Liu

Toward Efficient Methods for Charge Equilibration in Polarizable, Reactive Molecular Dynamics Applications

CSE-28 Kurt A. O’Hearn, H. Metin Aktulga

Clustering Millions of Faces by Identity

CSE-29 Charles Otto, Dayong Wang, Anil Jain

Secure Face Unlock: Robust Spoof Face Detection on Smartphones?

CSE-30 Keyurkumar Patel, Hu Han, Anil K. Jain

iFrame: Dynamic Indoor Map Construction through Automatic Mobile Sensing

CSE-31 Chen Qiu, Matt Mutka

Network Completion with Provable Guarantees by Leveraging Side Information

CSE-32 Abdol-Hossein Esfahanian, Dennis Ross, Farzan Masrour, Hayder Radha, Iman Barjasteh, Rana Forsati

Adaptive 3D Face Reconstruction from Unconstrained Photo Collections

CSE-33 Joseph Roth, Yiying Tong, Xiaoming Liu

An Efficient Integrated Approach to Precision Irrigation System Design for Optimal Usage Using EMO and Subsurface Water Retention Technology (SWRT)

CSE-34 Proteek Roy, Kalyanmoy Deb
Task Learning through Visual Demonstration and Situated Dialogue  
**CSE-35** Changsong Liu, Sari Saba Sadiya, Shaohua Yang, Joyce Y. Chai

Incremental Acquisition of Verb Hypothesis Space towards Physical World Interaction  
**CSE-36** Lanbo She, Joyce Y. Chai

Machine Learned Learning Machine  
**CSE-37** Leigh Sheneman, Arend Hintze

Predicting Missing Demographic Information in Biometric Records Using Label Propagation Schemes  
**CSE-38** Thomas Swearingen, Arun Ross

Opposition Based Optimization for Multi-Objective Problems  
**CSE-39** AKM Khaled Talukder, Shahryar Rahnamayan, Kalyanmoy Deb

Learning with Missing Modalities via Cascaded Residual Autoencoder  
**CSE-40** Luan Tran, Xiaoming Liu, Jiayu Zhou, Rong Jin

Privacy Preserving Data Publishing for Medical Data  
**CSE-41** Ding Wang, Pang-Ning Tan

Discriminative Fusion of Multiple Brain Networks for Early Mild Cognitive Impairment Detection  
**CSE-42** Qi Wang, Jiayu Zhou

A Performance Study of the Impact of Recombination and Other Evolutionary Processes on State-of-the-Art Phylogenetic Inference Methods  
**CSE-43** Zhiwei Wang, Kevin Liu

Multi-Task Learning with Tensor Decomposition and its Application on Geospatio-Temporal Data  
**CSE-44** Jianpeng Xu, Jiayu Zhou, Pang-Ning Tan, Lifeng Luo

Grounded Semantic Role Labeling  
**CSE-45** Shaohua Yang, Qiaozi Gao, Changsong Liu, Caiming Xiong, Joyce Chai
Multi-Task Convolutional Neural Network for Face Recognition in Constrained Environment

**CSE-46** Xi Yin, Xiaoming Liu

Analysis of Bounds on Hybrid Vector Clocks

**CSE-47** Sorrachai Yingchareonthawornchai, Sandeep Kulkarni, Murat Demirbas, Eric Torng

Automated Classification of EEG Signals for Predicting Students’ Cognitive States during Learning

**CSE-48** Xi Liu, Lei Liu, Pang-Ning Tan, Steven J. Simske

Cross-spectral Periocular Biometrics

**CSE-49** Steven Hoffman, Arun Ross

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**Electrical Engineering**

Wireless Technologies and Spike Sorting Algorithms for Brain/Machine Interfaces

**ECE-01** Sylmarie Dávila-Montero, Ehsan Ashoori, Yuning Yang, Andrew Mason

Recommendation for Cold-Start Users/Items

**ECE-02** Iman Barjasteh, Rana Forsati, Farzan Masrour, Abdol-Hossein Esfahanian, Hayder Radha

Dynamic Modeling of Robotic Fish Caudal Fin with Electrorheological Fluid-Enabled Tunable Stiffness

**ECE-03** Sanaz Bazaz Behbahani, Xiaobo Tan

Creating and Curating Reproducible Research Artifacts in the Internet-of-Things Era

**ECE-04** Sam Boling, Andrew J. Mason

Injection Molding Terahertz Passive Components

**ECE-05** Jennifer Byford, Zachary Purtill, Premjeet Chahal
Nonlinear Model Predictive Control of a Tail-Actuated Robotic Fish  
ECE-06 Maria Castaño, Xiaobo Tan

Study of the Effect of Temperature and Pocket Holder Depth on Single Crystal Diamond Growth via Microwave Plasma Assisted CVD  
ECE-07 Amanda Charris, Shreya Nad, Jes Asmussen

Natural Language–Based Robotic Programming  
ECE-08 Yu Cheng, Jiatong Bao, Yunyi Jia, Zhihui Deng, Haichu Chen, Lixin Dong, Ning Xi

Distributed Time Difference of Arrival Localization of a Moving Target  
ECE-10 Osama Ennasr, Xiaobo Tan

Waveguide Verification Standards for the Characterization of Magnetic Materials  
ECE-11 Jonathan Frasch, Edward Rothwell

Mobile Node Location Tracking Using LED Optical-Based Simultaneous Localization and Communication  
ECE-12 Jason N. Greenberg, Xiaobo Tan

A Generative Kriging Surrogate Model for Constrained and Unconstrained Multiobjective Optimization  
ECE-13 Rayan Hussein, Kalyanmoy Deb

Critical Evaluation of Shunt and Series Compensation Schemes for Hybrid Matrix Converter  
ECE-14 Ameer Janabi, Bingsen Wang

Lightweight Linear Electric Machine Design for Free-Piston Engine  
ECE-15 William Jensen, Shanelle Foster

Monolithic Multichannel GaN LED Arrays  
ECE-16 Wasif Khan, Wen Li

Investigation, Optimization, and Demagnetization Effect of the Use of New Ferrite Magnets for Design of Spoke-Type and PMASynRM Motors  
ECE-17 Cristian A. Lopez, Elias G. Strangas

Large-Signal RF Model Extraction of GaN HEMT Power Amplifiers  
ECE-18 Nicholas C. Miller, John D. Albrecht
Embedded Passive RF Tags Towards Intrinsically Locatable Buried Plastic Materials

Mohd Ifwat Mohd Ghazali, Saranraj Karuppuswami, Premjeet Chahal

Enhancing the Safe and Efficient High Pressure Microwave Plasma-Assisted CVD Operating Regime for SCD Synthesis Using Continuous Wave and Pulsed Microwave Excitation

Matthias Muehle, Jes Asmussen, Michael F. Becker, Thomas Schuelke

Portable Electrochemical Malaria Detection System for Affordable In-Field Measurement

Sina Parsnejad, Tung-yi Lin, Linlin Tu, Andrew Mason

Soft Pneumatic Bending Actuator with Integrated CNT-Based Strain Sensors

Thassyo Pinto, Le Cai, Chuan Wang, Xiaobo Tan

Computational Investigation Using Subregion Finite-Element Method for Solving the Inverse Problem in Eddy Current NDE

Mohammad R. Rawashdeh, Lalita Udpa, S. Ratnajeevan H. Hoole

Cupula-Inspired IPMC Sensor: Fabrication, Simulation, and Sensor Characterization

Montassar Aidi Sharif, Hong Lei, Xiaobo Tan

Experimental Implementation of Extended Kalman Filter-Based Optical Beam Tracking with a Single Receiver

Pratap Bhanu Solanki, Xiaobo Tan

Modeling and Assessment of PV Solar Plants for Composite System Reliability Considering Radiation Variability and Component Availability

Samer Sulaeman, Joydeep Mitra

Locally Linear Manifold Model for Gap-Filling Algorithms of Hyperspectral Imagery

Suha Suliman, Hayder Radha

VO₂-Based MEMS Mirror

David Torres, Tongyu Wang, Sarah Dooley, Xiaobo Tan, Huikai Xie, Nelson Sepúlveda

Transformation of Functional Connectivity Brain Networks to Signals

Marisel Villafañe-Delgado, Selin Aviyente
Causality Analysis of fMRI Data Based on the Directed Information Theory Framework

ECE-30 Zhe Wang, Ahmed Alahmadi, David C. Zhu, Tongtong Li

Lab-on-CMOS Platforms for Highly Integrated Microfluidic Biosensor Arrays

ECE-31 Heyu Yin, Lin Li, Andrew J. Mason

Wearable Electrochemical Gas Sensor Array for Personal Air Pollution Exposure Assessment

ECE-32 Heyu Yin, Sina Parsnejad, Hao Wan, Sam Boling, Ehsan Ashoorie, Andrew J. Mason

Fully-Printed Stretchable Conductor and Strain Gauge

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