Faculty Research Profiles
2017

Office of the Dean
School of Engineering and Computer Science
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Rochester, MI 48309-4479

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Welcome from the Dean

As Dean of the School of Engineering and Computer Science (SECS), I am committed to supporting the advancement of our faculty’s research, which is not only disseminated to their colleagues worldwide, but also integrated into our curriculum for our students’ benefit. Our applied research spans across a wide range of fields, including those related to national security, medical applications, the automotive industry, and military programs. You are invited to explore this booklet as you investigate how our School of Engineering and Computer Science faculty can serve your research needs.

- Louay Chamra, Professor and Dean
SECS comprises four departments:
- **Computer Science and Engineering**
- **Electrical and Computer Engineering**
- **Industrial and Systems Engineering**
- **Mechanical Engineering**

Oakland University's SECS offers instruction leading to degrees at the bachelor's, master's and doctoral levels. The SECS, with about 3,344 undergraduate and graduate students, features an outstanding faculty dedicated to preparing learners for the 21st-century workplace and society as well as for research in their fields of specialization. The school offers close student/faculty interaction, small classes and individualized attention.

The goal of the SECS is to provide students, faculty, and staff with the best educational and working experience in a highly supportive, yet stimulating, environment. Faculty provide the highest quality of education, which is enhanced by cutting edge research sponsored by federal agencies and industrial partners. In addition, the SECS will continue to be actively involved in outreach and economic development initiatives.
School of Engineering and Computer Science

Dean’s Office

Louay Chamra, Dean (248) 370-2217
Qian (Beth) Zou, Associate Dean (248) 370-2233
Keith Harvey, Business Manager (248) 370-2229
Kathy Livelsberger, Career Services (248) 370-3211
Anthonie Burke, Director of Development (248) 370-4176

Office Assistants

Dean’s Office
Jane Dietrich (248) 370-2217
Katie Loodeen (248) 370-2233
Barbara Kline (248) 370-4014

Computer Science and Engineering
Debbie Valla (248) 370-2200

Electrical and Computer Engineering
Bonnie Koch (248) 370-2177

Industrial and Systems Engineering
Maureen Callaghan (248) 370-2989

Mechanical Engineering
Brenda Bond (248) 370-2210

FAJRI
Sayed Nassar, Ph.D. (248) 370-3781

Undergraduate Advising
Marlene McKean (248) 370-2201

Undergraduate Advisers
Carmen Etienne, Director (248) 370-2201
Kelly Gianetto (248) 370-2201
Sarah Konrad (248) 370-2201
Kurtis Kirkpatrick (248) 370-2201
Eman Shammo (248) 370-2201
Debra Wheeler (248) 370-2201
Teaching
CSE 231/506: Object Oriented Computing II

Research
Making engineering of correct software easier for concurrent, secure, mobile and big data software.

Selected Publications
Jingshu Chen
Ph.D.
Michigan State University

Assistant Professor
Computer Science and Engineering Department

jingshuchen@oakland.edu
(248) 370-4087

Teaching
Software Engineering and Practice

Research
Software Reliability, Program Verification and Automatic Repair, Formal Methods, Distributed System

Selected Publications

Debatosh Debnath
Ph.D.
Kyushu Institute of Technology (Japan)

Associate Professor
Computer Science and Engineering Department
debnath@oakland.edu
(248) 370-2701

Teaching
Computer Architecture, Microprocessor-Based Systems, Logic Synthesis for Digital Systems, and Computer Networks

Research
Design and Optimization of Digital Circuits; CAD for Field-Programmable Devices; Decision Diagrams and Their Applications in VLSI CAD; Innovative Applications of FPGAs

Selected Publications

Laura Dinsmoor  
M.S.  
Oakland University  

Special Instructor  
Computer Science and Engineering Department  

dinsmoor@oakland.edu  
(248) 370-4591  

Teaching  
Computer Problem Solving in Computer Science; Introduction to Computer Programming, Introduction to Object Orientated Programming, Sophomore Project  

Research  
Computer Science Education; Increasing recruitment of women into Computer Science degrees. “I offer a workshop for middle school and high school teachers to give the techniques and information to help them recruit a diverse set of students in their computer science classes and clubs.” Laura Dinsmoor, 2016
Teaching
System Administration, Database Systems

Research
Search-based software engineering, evolutionary computation, software testing, requirements engineering, software modeling, software engineering applications, embedded systems, cloud computing

Selected Publications
Huirong Fu
Ph.D.
Nanyang Technological University (Singapore)
Postdoctoral Fellow, Rice University

Professor
Outstanding Service Award
Computer Science and Engineering Department

fu@oakland.edu
(248) 370-4456

Teaching
Introduction to Computer Networks, Advanced Computer Communication,
Information Security Practice, and Information Security

Research
Information Assurance and Security; Wireless and Mobile Networks; Sensor
Networks; Networks / Protocols / Applications; Multimedia Communication
Systems; Resource Management and Quality of Service (QoS)

Selected Publications
Multiple-Target Tracking with Wireless Sensor Networks,” IEEE Transac-
Deployed for Multi-Target Tracking,” IEEE Transactions on Intelligent
3. Qing Wang, Supeng Leng, Huirong Fu, and Yan Zhang, “An IEEE
802.11p-based Multi-channel MAC Scheme with Channel Coordination for
Vehicular Ad Hoc Networks,” IEEE Trans. on Intelligent Transportation
4. Supeng Leng, Liren Zhang, Huirong Fu, and Jianjun Yang, “A Novel
Location Service Protocol Based on K-Hop Clustering for Mobile Ad Hoc
Dae-Kyoo Kim
Ph.D.
Colorado State University

Associate Professor
Computer Science and Engineering Department

kim2@oakland.edu
(248) 370-2863

Teaching
Object-Oriented Programming; Software Engineering and Practice; Fundamentals of Software Modeling; Software Prototyping and Validation; Software Engineering; Software Verification and Testing

Research
Software Design and Specification; Pattern-Based Software Development; Aspect-Oriented Design; Access Control Modeling; Smart Grid Data Modeling; Internet of Things. “My research focuses on developing reliable, maintainable, and secure software systems” Dae-Kyoo Kim, 2016

Selected Publications
4. “Required Behavior of Sequence Diagrams Semantics and Refinement,” ACM Transactions on Software Engineering and Methodology, 23(2), 2014
Anyi Liu
Ph.D.
George Mason University
Assistant Professor
Computer Science and Engineering Department
anyiliu@oakland.edu
(248) 370-2137

Teaching
Introduction to Computer Programming; Computer Architecture, Programming Languages, Operating Systems, Network and System Security

Research
Network and system security, intrusion detection and prevention, malware analysis and defense, steganography, digital forensics, and privacy

Selected Publications
Lunjin Lu  
Ph.D.  
University of Birmingham (UK)  
Associate Professor and Chair  
Computer Science and Engineering Department  
L2Lu@oakland.edu  
(248) 370-2231

Teaching
Programming languages, Theory of computation, Object Oriented Programming, Data structures, Algorithms, Parallel and Concurrent programming

Research
Static Program analysis; Abstract Interpretation; Logic programming; Web application security; Software Security; Software verification

Selected Publications
4. Astrid Younang, Lunjin Lu: Improving Precision of Java Script Program Analysis with an Extended Domain of Intervals. **COMPSAC Workshops 2015**: 441-446  
Khalid Mahmood  
Ph.D.  
Tokyo Institute of Technology, Japan  
Assistant Professor  
Department of Computer Science & Engineering  
mahmood@oakland.edu  
(248) 370-3542

Teaching  
Information Security Practices; Advanced Web Design and Applications; Computer Networks; Interactive Web Systems; System Analysis; Object Oriented Programming

Research  

Selected Publications  
Teaching
Emerging programming paradigms, programming languages of different paradigms, compiler construction, software engineering

Research
Software intensive systems, formal semantics of programming languages, program analysis techniques, programming language type theory, design and implementation of programming languages, map-based mobile application development. “My research currently focuses on the foundational and practical applications of a new abstraction called Situation, supported by programming languages design theory (formal semantics), program analysis techniques (especially Abstract Interpretation) and the implementation level state-of-the-art (big data oriented software construction, mobile apps, compiler implementation and beyond).” Hua Ming, 2015.

Selected Publications
Nilesh Patel  
Ph.D.  
Wayne State University  
Associate Professor  
Computer Science and Engineering Department  
npatel@oakland.edu  
(248) 370-2247

**Teaching**  
Software Engineering, Mobile Computing, Smart phone application development, Pattern Recognition and Data mining

**Research**  
Data mining and knowledge discovery, Pattern Recognition, Image processing, Multimedia Information systems, Distributed and Multicore Computing, Embedded Software Engineering, Mobile Computing, Bioinformatics, Telematics and Automotive Computing

**Selected Publications**
4. “Multi Camera Multi Object Tracking using Block Search over Epipolar Geometry,” *NUiCone*, 2010
Guangzhi Qu  
Ph.D.  
University of Arizona  

Associate Professor  
Computer Science and Engineering Department  

gqu@oakland.edu  
(248) 370-2690  

Teaching  
Operating Systems; Wireless Networking; Network Security; System Administration; Data Mining; Machine Learning  

Research  
Data Mining; Machine Learning; Healthcare Computing; Information and Network Security; Discrete Event Simulation; Graph Databases  

Selected Publications  
Ishwar Sethi  
Ph.D.  
Indian Institute of Technology (Kharagpur)  

Professor  
Computer Science and Engineering Department  

isethi@oakland.edu  
(248) 370-2820  

Teaching  
Intro Computing with Excel, Computer Vision, Data mining, Deep Learning, Machine Learning, Pattern Recognition, and Research Methods  

Research  
Data Mining; Text, Image and Video Databases; Neural Networks Design & Applications; Motion Analysis & Object Tracking; Deep Learning; Pattern Recognition; Machine Learning  

Selected Publications  
Mohammad-Reza Siadat  
Ph.D.  
Wayne State University  
Associate Professor  
Computer Science and Engineering Department  
siadat@oakland.edu  
(248) 370-2230

Teaching
Visual Computing; Advanced Visual Computing; Pattern Recognition and Machine Learning; Computer Problem Solving; Design and Analysis of Algorithms

Research
Research interests include Medical Signal and Image Processing, Computational Anatomy and Physiology, and Medical Informatics. The goals are utilization of the wealth of available medical data to the fullest for data-driven and patient-specific diagnosis, treatment planning and prognosis.

Selected Publications
Teaching
Senior Design and Implementation, Bioinformatics, Computer Forensics, Senior Design

Research
Data Mining and Innovative Discovery; Intellectual Property and Creativity Informatics, Bioinformatics; Cyber Laws, Forensics and Computer Crimes; Parallel Computing and Algorithms

Selected Publications
7. “Mathematical model to predict regions of chromatin attachment to the nuclear matrix,” Nucleic Acid Research, 1997
Selected Publications


Teaching
Microprocessor-Based System Design

Research

Selected Publications
Daniel N. Aloi  
Ph.D.  
Ohio University  
Professor and Chair  
Electrical and Computer Engineering Department  
Director, Applied EMAG and Wireless Lab  
aloi@oakland.edu  
(248) 370-2177

Teaching  
Antennas, Electromagnetics, Communications & Global Navigation Satellite Systems

Research  
Director of the Applied EMAG & Wireless Lab (AEWL); Applied Electromagnetics, Antenna Design, Antenna Measurements, Antenna Modeling

Selected Publications
Teaching

Electrical Energy Systems, Electrical Machines, Power Electronics

Research

Power systems engineering, including smart-grids, microgrids, renewable energy, energy storage, computational and experimental methods, power system protection, electric power transmission and distribution.

Selected Publications

Ka Chai Cheok
Ph.D.
Oakland University
Professor
Electrical and Computer Engineering Department
cheok@oakland.edu
(248) 370-2232

**Teaching**
Automotive Mechatronics; Microcomputer-based Control Systems; Electric Drive Systems; Adaptive Control Systems; Intelligent Control Systems; Autonomous Vehicle Systems

**Research**
Basic theoretical research on control and estimation, signal and image processing, computational intelligence and decisions. Exploratory experiments in embedded controls and mechatronics; virtual & physical simulators; autonomous mobile robots; positioning & navigation system. Applications to self-navigating unmanned ground vehicles and omnidirectional vehicles, auto-lane centering automobile system, mine-detection robots, and automated IR cancer detection system. “My academic research strives to grasp deep insights of the subjects and extend their potential so they can be developed into useful tools. I work with professionals and entrepreneurs to bring these ideas to meaningful real world applications.” K.C. Cheok, 2013

**Selected Publications**
Manohar Das  
Ph.D.  
Colorado State University  

Professor  
Electrical and Computer Engineering Department  

das@oakland.edu  
(248) 370-2237

Teaching  

Research  
Adaptive Signal Processing and Control, Digital Signal and Image Processing, Data Compression, Pattern Recognition, System Modeling and Identification.  
“Research in modeling, adaptive signal processing and control involves development of signal/system models, and algorithms for filtering, detection, identification and controls in presence of uncertainties and noise in a process or system.” Monohar Das, 2015

Selected Recent Publications  
Brian Dean  
Ph.D.  
University of Wyoming  
Assistant Professor  
Electrical and Computer Engineering Department  
bkdean@oakland.edu  
(248) 370-2822

**Teaching**  
Instrumentation and Measurement, Bioinstrumentation and Signal Processing, Electronics

**Research**  
Sensors, Signal Conditioning and Signal Processing, Biomimicry, Electric Motors, Embedded Systems

**Selected Publications**


Subraminiam Ganesan  
Ph.D.  
Indian Institute of Science (Bangalore)  

Professor  
Electrical and Computer Engineering  
Department  
Associate Director Center for Robotics,  
Unmanned and Intelligent Systems  

ganesan@oakland.edu  
(248) 370-2206  
secs.oakland.edu/~ganesan  

**Teaching**  
Graduate level courses: Real time systems, FPGA based embedded systems, microprocessor based embedded systems, DSP in embedded systems, Validation and verification of embedded systems, Parallel Computer Architecture and multi core embedded system programming, and Developing embedded sensor systems for real time tracking and Internet of things  

**Research**  
Divisible Load Scheduling in multi-core and multi-processor systems; Condition Based Maintenance, Real Time DSP/Multiprocessor Systems for Specific Applications, Model Based Systems design. Multicore engine controller for low cost and high gas mileage, Application of computer engineering for assistance to the needy, and also safety and comfort of the world. Real time tracking with iPad display and sensors.  

**U.S. Provisional Patent:** Steve Oberc, Hare Patnaik and Subra Ganesan, Application No.: 62/169,194, Filed: June 1, 2015; For: SYSTEMS AND METHODS FOR OBTAINING SPORTS-RELATED DATA  

**U.S. Provisional Patent:** Subramaniam Ganesan, Aqeel F. Aqeel and John Chupa “Retina analysis” 5/13/2016.  

**Selected Publications**  
Teaching
Robotic Systems and Control; Analysis of Nonlinear Control Systems; Electromechanical Energy Conversion; Automatic Control Systems

Research
Kinematics, Task-Planning, Dynamic Modeling and Control of Robotic Systems; Nonlinear Systems Modeling, Analysis, Adaptive Control and Computer Simulations, Human Biomechanical and Biodynamic Modeling and Digital Simulations; Learning and Intelligent Control of Human-Machine Interactive Systems. “The major research interests are in the areas of robotic kinematics, dynamics and control, nonlinear control systems, and digital human modeling and applications. Robotics research and technology development have been helpful in industrial applications for decades, and are now at the cutting-edge of making another big leap to create a robot that imitates the entire human capability and intelligence. The impact will be tremendous on society and economics in the near future.” Edward Y.L. Gu, 2013

Selected Publications
**Darrin M. Hanna**  
Ph.D.  
Oakland University  
Associate Professor  
Outstanding Teaching Award  
Electrical and Computer Engineering Department

dmhanna@oakland.edu  
(248) 370-2170

**Teaching**  
Embedded Systems; Computer Problem Solving; Digital Logic and Microprocessors; Information Networks

**Research**  
Using mixed-mode microprocessorless systems such as FPGAs, ASICs, and MEMS with Artificial Intelligence for embedded systems

**Selected Publications**
Teaching

Research
Statistical Signal Processing with applications in biomedical imaging and communications. The current and past projects include image segmentation, reconstruction and registration of different imaging modalities, UWB channel modeling and capacity evaluation, and intra-vehicle wireless sensor network.

“(My) research is in the area of statistical signal processing with applications in biomedicine and communications. The extraction, modeling and analysis of signals or parameters from noisy measurements have broad range of practices in science and engineering, and in the industries of defense, finance, health care and telecommunications.” Jia Li, 2013

Selected Publications
Daniel Llamocca  
Ph.D.  
University of New Mexico  
Assistant Professor  
Electrical and Computer Engineering Department  
llamocca@oakland.edu  
(248) 370-4042  

**Teaching**  
Digital Logic, Reconfigurable Computing, Computer Architecture, Microprocessors, Embedded Systems, Digital Signal and Image Processing with FPGAs  

**Research**  
Run-time Reconfigurable Architectures, Embedded Systems, High performance architectures for computer arithmetic, signal and image processing, and video communications. “Research in run-time automatic adaptation of hardware resources to time-varying constraints with the purpose of delivering the optimal hardware solution at any given time.” Daniel Llamocca, 2014.  

**Selected Publications**  
Wing-Yue Geoffrey Louie
Ph.D.
University of Toronto
Assistant Professor
Electrical and Computer Engineering Department
louie@oakland.edu
(248) 370-2860

Teaching
Microcontrollers

Research
Robotics, Sensing and Controls, Human-Robot Interactions, Machine Learning and Artificial Intelligence, User-Centered Design, User Testing
“The core theme of my research is on the development of robot technology that can be easily utilized by non-experts for real-world application scenarios such as manufacturing, medical, service, space, social and personal robotics.”

Selected Publications
Khalid Mirza
Ph.D.
The Ohio State University

Special Instructor
Director, Chrysler Controls & Robotics Laboratory
Electrical and Computer Engineering Department

mirza@oakland.edu
(248) 370-4629

Teaching
Industrial Robotics; Robotic Systems and Control; Machine Vision; Intelligent Control Systems; Electric Circuits; Introduction to Electrical and Computer Engineering.

Research
Collaborative robots (machine vision, sensor integration, teaching interfaces); Industrial mobile robots (modular scalable platforms, reliable indoor autonomous navigation, safety standards); Cloud robotics (Machine learning, big data, IOT, Industry 4.0, part-centric robot programming). “Industrial robots and automation is the key component for advanced manufacturing. My research is focused on developing ideas and engage in multidisciplinary fields to realize the next generation industrial robotics.” Khalid Mirza, 2016.

Selected Publications
2. “General formulation for force distribution in power grasp,” IEEE International Conference on Robotics and Automation
Teaching
Electronic circuits and devices; Fundamentals of MEMS; Integrated devices and circuits; Advanced electronics design

Research
Micro-electro-mechanical systems (MEMS), Solid-state sensors, CMOS-MEMS technology, Applications of MEMS in biomedicine and security, Nanotechnology and devices, MEMS/NEMS modeling

Selected Publications
2. G. Sreenivasulu; P. Qu; V. Petrov; H. Qu and G. Srinivasan, “Sensitivity enhancement in magnetic sensors based on ferroelectric-bimorphs and multiferroic composites”, Sensors, 16 (2), 2016, pp. 262-274.
4. G. Sreenivasulu; P. Qu; V. Petrov; H. Qu and G. Srinivasan, “Magneto-electric interactions at bending resonance in an asymmetric multiferroic composite,” Journal of Applied Physics, 117 (17), 2015, 174105.
Osamah A. Rawashdeh  
Ph.D.  
University of Kentucky

Associate Professor  
Academic Programs Coordinator  
Electrical and Computer Engineering Department

rawashd2@oakland.edu  
(248) 370-2866

Teaching  
Microcontrollers; Mixed-Signal Embedded Systems; Mechatronics; Fault-Tolerant Computing

Research  
Unmanned systems development, multicore computing for automotive power-train control, embedded controls. “Microprocessors are increasingly embedded into all kinds of products and systems to make them more intelligent and able. My research is focused on the efficient implementation of such computer-controlled devices with special focus on enhancing their reliability, performance, and power consumption.” Osamah Rawashdeh, 2015

Selected Publications
Teaching

Research
Electromagnetic Compatibility, High Frequency Electronics. “The major part of research is related to measurements, modeling and simulations of high speed twisted pair transmission lines applied in automotive industry.” Andrew Rusek, 2013

Selected Publications
3. “Improving Student Understanding of Instrumentation and Measurements in US Engineering Undergraduate Programs,” 2009 ASEE, North Central Section Conference, Grand Valley State University, Grand Rapids, MI., April 3-4, 2009
Teaching
Biomedical Imaging; Digital Image Processing; Digital Signal Processing

Research
Image reconstruction, evaluation, and analysis in emission computed tomography. “To develop and advance medical imaging techniques to improve clinical diagnosis and disease treatment.” Jing Tang, 2016

Selected Publications
Teaching
Signal and Linear Systems Analysis; Optimal Control Theory; Automatic Control Systems, Optimal Estimation, Digital control

Research
Advanced control and estimation, intelligent pattern information processing, neural, fuzzy, evolutionary systems, chaos control, smart simulation, hybrid systems. Research contracts with government, industry; recent seed funds on Fuel Cell modeling and control for transportation, hold considerable promise for improving vehicle energy supply, also FCA Powertrain controls, Lear Power Electronics, Kia motors, NSF, USAID.

Selected Publications
William Edwards, P.E.  
Ph.D.  
Oakland University  

Visiting Professor  
Industrial & Systems Engineering  

wedwards@oakland.edu  
(248) 370-2989  

**Teachings**  
Engineering Project Management  
Flexible and Lean Manufacturing  
Engineering Economics & Statistical Analysis  
Production Systems  
& Work Flow Analysis  

Statistical Quality Analysis  
Ergonomics  
Human Factors Engineering  
PLM Ergonomics  
PLM Robotics  

**Research**  
Move It Forward Theory (MIFT) Production Management  
Rare Event Downtime Analysis  
Rare Event Prediction  

**Selected Publications & Presentations**  
1. Move It Forwards Theory (MIFT);  
    IEOM Conference, Lawrence Technical University, September 2016  
2. Move It Forward Theory (MIFT),  
    Oakland University Graduation Research Symposium, April 2016  
3. Move It Forward Theory (MIFT)  
    INFORMS Symposium Wayne State University; November 2013  
4. Engineering and its Future  
    AISES Conference Presentation, Phoenix AZ, November 2007  
5. Vehicle Dynamics,  
    Vehicle Dynamics Conference, New Orleans LA, December 2003  

**Awards**  
Wards AutoWorld 10 Best Engines Award, Ford Customer Driven Quality Award, Ford Complexity Reduction Award  

**Affiliations (Current & Past)**  
Boardmember of Michigan Simulation Users Group (M-SUG)  
American Indian Science & Engineering Society (AISES)  
Native American Indian Employee Resources Group (NAERG)  
Project Management Institute (PMI)  
SAE, TBP  
ASME, IEEE  
Society Mfg Engrs  
ESD
Nasim Nezamoddini  
Ph.D.  
New York State University at Binghamton  
Assistant Professor  
Industrial and Systems Engineering Department  
nezamoddini@oakland.edu  
(248) 370-2215

Teaching  
ISE 4431/5431: Engineering Operations Research-Stochastic Models

Research  
Cyber-Physical Systems, Network Systems Modeling and Optimization, Smart Grid, Cyber Manufacturing, Big-Data Analytics

Selected Publications

Barbara Oakley  
Ph.D.  
Oakland University  

Professor of Engineering  
Industrial and Systems Engineering Department  

oakley@oakland.edu  
(248) 370-2435  

**Teaching**  
Probability and statistics, neuroscience, bioengineering, electrical circuits, thermodynamics and electromagnetics; Specialize in collaborative learning approaches and online learning. Teaches the world’s largest MOOC, *Learning How to Learn*, through Coursera-UCSD, with a million registered students in its first year.  

**Research**  
Pathological altruism and altruism bias; Translational research that provides simple ways to understand how to learn math, science, engineering and technology more easily using insights from neuroscience and cognitive psychology.  

**Selected Publications**  
**Teaching**

**Research**

**Selected Publications**
Teaching
Circuits; modeling and statistical methods; controls; operations research

Research
Identification, estimation and control of distributed parameter systems, that is systems described by partial differential or delay equations. Transportation systems, and particularly for subway systems. Smart-grid problems relating to optimizing the electric power grid of the future. “This research enables systems to work more efficiently.” Michael Polis, 2016

Selected Publications
Teaching
Production Systems and Work Flow Analysis; Computer Simulations Discrete Events; Manufacturing Processes; Quality

Research
Application of OR methods to Manufacturing Systems Design and Control; Quality Control; Design Methodologies for Product Design; CIM

Selected Publications
Robert P. Van Til  
Ph.D.  
Northwestern University  

Pawley Professor of Lean Studies  
Chair  
Industrial and Systems Engineering Department  

vantil@oakland.edu  
(248) 370-2211  

**Teaching**  
Flexible and Lean Manufacturing Systems, Robotic Systems, Lean Principles and Application, Senior Design, Introduction to Industrial and Systems Engineering  

**Research**  
Analytical and simulation modeling of manufacturing systems, application of lean to manufacturing and healthcare, Product Lifecycle Management  

**Selected Publications**  
Gary Barber  
Ph.D.  
University of Michigan

Professor  
Mechanical Engineering Department

barber@oakland.edu  
(248) 370-2184

Teaching  
Properties of Materials; Material Properties and Processes; Lubrication, Friction and Wear; Machine Design

Research  
Director, Automotive Tribology Center; Tribology of Engine Cylinder Kits; Engine Valve Wear, Effect of Tool Wear on the Surface Topography of Machined Surfaces

Selected Publications
Yin-ping (Daniel) Chang  
Ph.D.  
Pennsylvania State University  
Associate Professor  
Mechanical Engineering Department  
ychang@oakland.edu  
(248) 370-2209  

**Teaching**  
Statics; Dynamics; CAD/CAM/CAE; Kinematics and Mechanisms; Vibrations; Controls; Vehicle Dynamics; Tire/Terrain Mechanics; Vehicle System Design  

**Research**  
Vehicle Dynamics; Tire/Terrain Mechanics; NVH; Vibrations; Controls; Kinematics and Mechanisms; Machine Design; Solid Mechanics; Finite Element Analysis; Multi-Body Contact-Impact modeling; Optimization.  

"Machine Design, Vehicle Dynamics and Tire/Terrain Mechanics research will improve vehicle’s riding comfortability and increase its safety and stability.” Yin-Ping Chang, 2015  

**Selected Publications**  
Dan DelVescovo  
Ph.D.  
University of Wisconsin-Madison  

Assistant Professor  
Mechanical Engineering Department  

delvescovo@oakland.edu  
(248) 370-4590  

Teaching  
Thermodynamics; Fluid Mechanics; Heat Transfer; Combustion; Internal Combustion Engines  

Research  
Internal Combustion Engines; Advanced Combustion Strategies; Alternative Fuel Sources; Engine and Combustion Modeling; Chemical Kinetics  

“Future engines will have to operate under various combustion modes, using a variety of fuel sources. Understanding how to minimize emissions and maximize efficiency under these uncertainties will help pave a way towards better fuel economy and decreased pollution.” – Dan DelVescovo, 2016  

Selected Publications  
Sergey Golovashchenko
Ph.D.
Bauman Moscow State Technical University

Associate Professor
Mechanical Engineering Department

golovash@oakland.edu
(248) 370-4051

Teaching

Research
Innovative technologies of sheet metal forming and joining enabling substantial weight savings for automotive industry including high velocity forming and welding methods. “My research interests are in the area of metal fracture during plastic deformation, development of manufacturing methods expanding formability limits and technologies of solid state welding of dissimilar high strength alloys.” Sergey Golovashchenko, 2014

Selected Publications
5. Recent US Patents granted: 9,421,636; 9,375,775; 9,296,037; 9,266,190; 9,174,259; 9,168,581; 9,056,346; 9,044,801; 8,966,950; 8,875,554; 8,844,331.
Randy J. Gu  
Ph.D.  
State University of New York, Buffalo  

Professor  
Mechanical Engineering Department  

gu@oakland.edu  
(248) 370-2235  

Teaching  

Research  

Selected Publications  
Teaching
Fluid Mechanics; Heat Transfer; Computational Fluid Dynamics

Research
Computational fluid dynamics and computational heat transfer; wind turbine farm layouts using Spectral Element Methods; Multiphase flow simulations of piston oil jet cooling. “I strive to use numerical tools to improve our understanding and modeling of various fluid/thermal problems, including wind turbines, engine flows, and problems related to wear and scuffing of materials.” Laila Guessous, 2016

Selected Publications
Ching Long Ko
Ph.D.
University of Oklahoma

Associate Professor
Mechanical Engineering Department

ko@oakland.edu
(248) 370-2694

Teaching
Engineering Mechanics; Finite Element Analysis; Mechanics of Materials; Fluid Mechanics

Research
Mechanics of Composite Materials and Structural Design; Finite-Element Analysis of the Metal-Forming Process; Computational Fluid Mechanics and Numerical Heat-Transfer Analysis; Vibration Analysis of Plate and Shell Structures; Hot-wire and LDA Measurements in Fluid Flows; Analytical Modeling of Fluid-Structure Interaction; Dynamics and Nonlinear Vibration; Impact Dynamics and Plasticity

Selected Publications
Krzysztof J Kobus  
Ph.D.  
Oakland University  
Associate Professor; Director of Outreach, Recruitment and Retention, School of Engineering and Computer Science (SECS); Director of Engineering and Energy Education, OU INC Clean Energy Research Center (CERC); OU Center for Excellence in Teaching and Learning (CETL) Faculty Fellow  
cjkobus@oakland.edu  
(248) 370-2489

Teaching  
- Recipient of the 2013 Dr. Wilbert J. McKeachie International Poster Prize for best poster at the 7th Annual OU-Windsor Conference on Teaching and Learning.  
- Recipient of 2014 SECS Teaching Excellence Award

Research  
Clean Energy Applied Research; Energy Efficiency, Energy Management, Transient and Unstable Behavior in Two-Phase Evaporating and Condensing Flow; Single and Multitube Systems; Combined Forced and Natural Convective Heat Transfer; Boundary Layer Theory; Analytical and Experimental Methods Associated with Steady-State and Time Varying Fluid and Thermal Systems, Components, and Processes. “One of my research areas is in energy efficiency in maintaining our standard of living, but minimizing the environmental footprint necessary to do so. The biggest challenge to humanity has historically been survival, but now is sustainability and that affects everything and everyone.” Krzysztof Kobus, 2013

Selected Publications  
Michael A. Latcha  
Ph.D.  
Wayne State University  
Associate Professor  
Mechanical Engineering Department  
latcha@oakland.edu  
(248) 370-2203

Teaching
• Machine Design - modeling, analysis, simulation and fabrication of electro-mechanical systems
• Numerical Methods
• Mechanics of Materials
• Dynamics, Vibrations

Research
Research interests:
• Modeling, analysis, simulation and fabrication of electro-mechanical systems
• Numerical methods, computational mechanics
• Modeling of multi-body dynamic systems
• Structural, numerical and visco-thermal acoustics

Selected Publications
• Melting-Pot Senior Design at OU: 10 Years of Lessons Learned, M. Latcha and M. Zohdy, Proceedings of the 2014 ASEE North Central Conference, ASEE
• Melting Pot Design at Oakland University, M.A. Latcha, D. Debnath, I. Elhajj, E. Gu, R.E. Haskell, Proceedings of the Engineering Capstone Design Course Conference, 2007
• The Melting Pot Approach to Senior Design Part II: Assessment and Improvement, M.A. Latcha, S. Ganesan, E. Gu, R.E. Haskell, Proceedings of the 2005 ASEE North Central Conference, ASEE
Jonathan Maisonneuve  
Ph.D.  
Concordia University  

Assistant Professor  
Mechanical Engineering Department  

maisonneuve@oakland.edu  
(248) 370-2657  

Teaching  
Renewable energy; Energy conversion; Thermodynamic; Fluid mechanics; Power engineering  

Research  
Renewable energy systems; Food, energy, water nexus; Energy efficient greenhouse systems; Photosynthetic solar cells; Salt gradient energy conversion  

Selected Publications  
Zissimos P. Mourelatos
Ph.D.
University of Michigan
Professor
Mechanical Engineering Department
mourelat@oakland.edu
(248) 370-2210

Teaching
Design under Uncertainty; Reliability Methods; Vibrations and Controls; Random Vibrations; Noise, Vibration and Harshness (NVH)

Research
Design and Decision Making under Uncertainty; Reliability, Safety and Quality; Probabilistic Methods; Reliability-Based Design Optimization; Model Validation and Verification; Design Optimization of Large-Scale Vibratory Systems; Random Vibrations; Noise, Vibration and Harshness (NVH); Bearing Lubrication; I.C. Engine Dynamics. “(I am) a nationally and internationally recognized expert in engineering design and automotive R&D with substantial contributions in reliability methods, quality, and safety, as well as in engine design and dynamics.” Zissimos Mourelatos, 2013

Selected Publications
Sayed A. Nassar  
Ph.D.  
University of Cincinnati  
Distinguished University Professor  
Director of FAJRI  
Mechanical Engineering Department  
nassar@oakland.edu  
(248) 370-3781  

Teaching  

Research  
Joining of materials, fasteners and bolted Joint, vibration-induced loosening of threaded fasteners, lightweight materials and composite joins, damage modeling.  

Selected Publications  
Teaching

Research
Internal Combustion Engines; Heat Transfer and Fluid Mechanics in Thermal Systems, Thermal System Modeling; Instrumentation and Optical Diagnostics; High-Speed Motion Photography

Selected Publications
James David Schall  
Ph.D.  
North Carolina State University  
Associate Professor  
Mechanical Engineering Department  

schall@oakland.edu  
(248) 370-2870  

Teaching  
Electromechanical Systems; Materials Properties and Processes; Polymer Materials;  
Polymer Processing  

Research  
Molecular simulation of tribology; Molecular simulation of diamond and diamondlike  
carbon films; Experimental and theoretical measurement of thermal and tribological  
properties of nanofluids; Hydrogen embrittlement of wind turbine bearings;  
Nanoindentation of graphene and graphane films; Development of interatomic  
potentials  

Selected Publications  
1. “The Effects of Interface Structure and Polymerization on the Friction of Model  
Self-Assembled Monolayers,” Tribology Letters, 2011  
2. “Interdisciplinary Sophomore Design at Oakland University,” ASEE North Central  
& Illinois-Indiana Section Conference, 2011  
3. “AERIM Automotive-themed REU Program: Organization, Activities, Outcome  
and Lessons Learned,” ASEE Annual Conference and Exposition, 2011  
4. “Evaluation of Thermal Conductivity and Viscosity of Water-based Al2O3  
Nanofluids,” Society of Hispanic Professional Engineers Conference, 2010  
Xia Wang
Ph.D.
Rensselaer Polytechnic Institute

Associate Professor
Mechanical Engineering Department

wang@oakland.edu
(248) 370-2224

**Teaching**
Thermodynamics; Heat Transfer; Fluids Mechanics; Energy Systems Analysis; Fuel Cells; Batteries for EV and HEV

**Research**
Thermal Management of Battery Systems; Fuel Cell Modeling, Design and Diagnostics; Biomass Pellets Properties Characterization and Optimization; Turbulent Boundary Layers with Separation; Forced Convection Turbulent Boundary Layers.

**Selected Publications**
Zhijun (Jason) Wu  
Ph.D.  
Oakland University  

Special Instructor  
Mechanical Engineering Department  

wu@oakland.edu  
(248) 370-3782

**Teaching**  

**Research**  
Mechanical behavior of various joining technologies including threaded fasteners, adhesive bonding and spot welding, structural durability, properties of materials, engine component design, computer-aided design and simulation.

**Selected Publications**

Teaching
Optical Measurement and Quality Inspection; Advanced Optical Methods in Experimental Mechanics; Mechanics of Materials; Materials Properties

Research
Development and application of advanced optical techniques for solving engineering problems. The research focuses on experimental strain/stress analysis, nondestructive testing and material evaluation, vibration measurement and analysis, microstructure and MEMS measurement, and design validation and optimization.

Selected Publications in 2016
Peng Zhao
Ph.D.
Princeton University

Assistant Professor
Department of Mechanical Engineering

pengzhao@oakland.edu
(248) 370-2214

**Teaching**
EGR 250: Introduction to Thermal Engineering; ME 456: Energy System Analysis and Design; ME 555: Combustion Processes

**Research**
Combustion and reacting flow; Abnormal combustion in spark-ignition engines; Fuel sensitivity and advanced compression ignition engines; Reaction network analysis and reduction; Thermal management and safety of batteries

“My work aims to bridge fundamental combustion science with advanced engine and transportation technology, and eventually to realize low emission and high efficiency energy and propulsion systems.” Peng Zhao, 2016

**Selected Publications**
Qian Zou
Ph.D.
Tsinghua University (China)

Professor and Associate Dean
School of Engineering and
Computer Science

qzou@oakland.edu
(248) 370-2233

Teaching
Statics and Dynamics; Mechanics of Materials; Analysis and Design of
Mechanical Structures; Lubrication, Friction and Wear; Advanced Tribology

Research
Automotive Tribology, Wear and Scuffing - Modeling and Testing,
Nanofluids, Lubrication Theory, Contact Mechanics Analysis.

Selected Publications
1. “Experimental observation on the surface dimple variations in starved
3. “Effect of Particle Concentration on Tribological Properties of ZnO
4. “Microstructure and sintering mechanism of C/Cu composites by
mechanical alloying/spark plasma sintering”, Journal of Composite
5. “Effect of C/Ti ratio on the compressive properties and wear properties
of the 50 vol.-% submicron-sized TiCx/2014Al composites fabricated by
combustion synthesis and hot press consolidation”, Powder Metallurgy,
2016.
6. “Effects of ternary elements on the ductility of TiAl”, Canadian