Untenured Faculty Network
Brief Biographical Sketches
2015-2016
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Untenured Faculty Network 2015-16

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<td>Zhang, Bill</td>
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Industrial & Manufacturing Systems Engineering
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Mechanical & Nuclear Engineering
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Bindra, Hitesh 6
Chen, James 8
Derby, Melanie 9
McNeil, Walter 19
Roberts, Jeremy 26
Jonathan P. Aguilar

Department: Biological and Agricultural Engineering / Southwest Research and Extension Center
Email: jagular@ksu.edu
Phone: 620-275-9164
Website: http://www.bae.ksu.edu/people/faculty/aguilar/index.html
Office: Southwest Research-Extension Center, 4500 E. Mary St., Garden City, Kansas 67846

Education
Ph.D. 2009 Biological and Agricultural Engineering Kansas State University, Manhattan, KS
M.S. 2005 Agricultural Engineering University of the Philippines Los Baños, Los Baños, PHL

Academic/Industrial Experience
- Assistant Professor, Kansas State University, Southwest Research and Extension Center, Garden City, KS, 2012-present
- Post Doctoral Agricultural Scientist, Northern Great Plains Research Laboratory (NGPRL), USDA-ARS, Mandan, ND, 2011-2012
- Post Doctoral Agricultural Engineer, Northern Plains Agricultural Research Laboratory (NPARL), USDA-ARS, Sidney, MT, 2009-2011
- University Researcher II, Land and Water Resources Division, University of the Philippines Los Baños, Los Baños, PHL, 2002-2007

Key Words Related to Your Activities
Extension specialist, irrigation research, water resource allocation, groundwater development, GIS, remote sensing

Short Description of Educational Interests
Provide educational opportunities for county agents and producers regarding water-related topics and issues.

Short Description of Research Interests
Applying GIS tools and techniques and new technologies to provide solutions and options for producers to manage water-related concerns

Three Recent Publications

Recent Research/Outreach/Extension Projects
- “Water Conservation Technologies and Management Practices in the Ogallala Aquifer Region,” funded by USDA-ARS
- “Conversion of Crop Water Allocator (CWA) and Crop Yield Predictor (CYP) for Web-Based Delivery in Kansas and Texas,” funded by USDA-ARS Ogallala Aquifer Program
- “In-field demonstration and evaluation of soil water sensors in conjunction with ET-based irrigation scheduling,” funded by USDA-ARS Ogallala Aquifer Program

Hardware/Equipment Capabilities within Your Research Activities
Multi-parameter water quality test kit, overhead sprinkler uniformity test assembly, mobile irrigation lab

Software/Simulation Capabilities within Your Research Activities
ArcGIS, Manifold, JMP, Minitab, MS Access, Crop Water Allocator, KanSched, Crop Yield Predictor
Chris Ahern

Education
M.S.  2005  Architectural Engineering  Kansas State University, Manhattan, KS
B.S.  2005  Architectural Engineering  Kansas State University, Manhattan, KS

Academic/Industrial Experience
•  Assistant Professor, Architectural Engineering and Construction Science, December 2012-Present
•  Principal/Project Manager, PKMR Engineers, Overland Park, KS, June 2005-December 2012

Key Words Related to Your Activities
Mechanical, electrical, plumbing building systems, construction administration

Short Description of Educational Interests
•  Teaching undergraduate courses in MEP systems in buildings

Short Description of Research Interests
•  MEP building systems.

Software/Simulation Capabilities within Your Research Activities
Trace 700, AutoCad
Placidus B. Amama

**Department:** Chemical Engineering  
**Website:** http://www.che.ksu.edu/people/amama/  
**Email:** pamama@k-state.edu  
**Phone:** 785-532-4318

**Education**

<table>
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<th>Field of Study</th>
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<tr>
<td>Postdoctoral Scholar</td>
<td>2004</td>
<td>Chemical Engineering</td>
<td>Yale University</td>
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<tr>
<td>Ph.D.</td>
<td>2002</td>
<td>Environmental Engineering</td>
<td>Yokohama National University (Japan)</td>
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<tr>
<td>B.Sc.</td>
<td>1992</td>
<td>Chemistry</td>
<td>University of Calabar (Nigeria)</td>
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**Academic/Industrial Experience**

- Research Scientist, Wright-Patterson Air Force Research Laboratory, December 2007 – August 2013
- NASA-INaC Postdoctoral Fellow/Associate Research Scientist, BNC, Purdue University, August 2004–November 2007

**Key Words Related to Your Activities:**

- Heterogeneous catalysis, nanomaterials, reaction engineering, carbon nanotubes, rational catalyst design, energy storage, environmental remediation

**Short Description of Educational Interests**

- Teaching Advanced Chemical Reaction Engineering (CHE 822) to graduate students
- Planning to teach Transport Phenomena Lab (CHE 535) to undergraduate students

**Short Description of Research Interests**

- Rational catalyst design for controlled growth of nanocarbon materials
- 3D nanocarbon-based catalyst supports for efficient Fischer-Tropsch synthesis
- Nano-engineering of nanomaterials for energy and environmental applications

**Three Recent Publications**

Web of Knowledge h-index: 15


**Hardware/Equipment Capabilities within Your Research Activities**

- Fully automated LabView-controlled CVD system for the growth of nanostructures (carbon nanotubes, graphene, and boron nitride nanotubes)
- Ion beam sputter deposition and etching system for thin film deposition and materials processing solutions
- Freeze dryer for processing nanomaterials
- Galvanostat for electrochemical characterization
Amir Bahadori

Department: Mechanical and Nuclear Engineering
Website: http://www.mne.ksu.edu
Email: bahadori@ksu.edu
Phone: 785-532-5610

Education
PhD 2012 Biomedical Engineering University of Florida, Gainesville, FL
MS 2010 Nuclear and Radiological Engineering University of Florida, Gainesville, FL
BS 2008 Mechanical Engineering (Nuclear Option) Kansas State University, Manhattan, KS
BS 2008 Mathematics Kansas State University, Manhattan, KS

Academic/Industrial Experience
• Assistant Professor, Kansas State University, December 2015 – present
• Radiation Scientist, University of Houston/NASA Johnson Space Center, October 2010 – October 2015

Key Words Related to Your Activities
Radiation transport, radiation dosimetry, space radiation, charged particles, radiation detection, biological modeling, radiation risk, ray tracing, radiation effects on electronics

Short Description of Educational Interests
• Demonstrate applicability of knowledge to real world situations and career-oriented problems
• Develop and teach courses in health and medical physics

Short Description of Research Interests
• Radiation dosimetry for medical, occupational, and accidental exposures
• Space radiation detection using pixelated array detectors
• Incorporation of radiation measurements with simulation to determine exposure-associated risk
• Development and use of multi-scale models to improve radiation risk estimates

Three Recent Publications

Recent Research/Outreach/Extension Projects
• Advanced Exploration Systems RadWorks Radiation Environment Monitor (NASA)
• Deterministic and Monte Carlo Transport Code Comparisons (NASA)

Hardware/Equipment Capabilities within Your Research Activities
• High-performance cluster computing

Software/Simulation Capabilities within Your Research Activities
• Radiation transport (MCNP, FLUKA, PHITS, HZETRN)
• Internal and external radiation dosimetry
Amy Rachel Betz

**Department:** Mechanical and Nuclear Engineering  
**Website:** http://www.mne.ksu.edu/people/faculty/betz  
**Email:** arbetz@ksu.edu  
**Phone:** 785-523-2647

**Education**

- **PhD 2011** Mechanical Engineering  
  Columbia University School of Engineering and Applied Science, New York, New York
- **M.S. 2008** Mechanical Engineering  
  Columbia University, New York, New York
- **B.S. 2006** Mechanical Engineering  
  The George Washington University, Washington, DC

**Academic/Industrial Experience**

- Assistant Professor, Mechanical and Nuclear Engineering, Kansas State University, Manhattan, KS, 2011-present

**Key Words Related to Your Activities**

Heat transfer, microfluidics, multiphase transport

**Short Description of Educational Interests**

I am committed to developing people through classroom instruction, research opportunities, and mentoring. Along with my classroom instruction I provided research opportunities for undergraduate and high school students. I also participate with outreach activities with the Multicultural Engineering Program, BNSF, and the Kansas Children’s Discovery Center.

**Short Description of Research Interests**

My research focuses on multiphase microfluidic transport. Both water and energy are recognized worldwide as limited and interconnected resources. Enhancing and controlling multiphase processes such as boiling and condensation can increase energy efficiency and lower water consumption in many processes such as power generation. Due to the multi-scale nature of multiphase systems, patterning and structuring surface at the micro and nano level can be used as an effective tool to control, enhance, or mitigate multiphase transport.

**Three Recent Publications**


**Hardware/Equipment Capabilities within Your Research Activities**

- Minitect Micromilling Machine - Produces features down to 5 µm with 1 µm precision with spindle speeds up to 60,000 rpm.
- First Ten Angstroms Goniometer - Measures contact angle, surface energy, roll-off angle, and visualize drop impact.
Hitesh Bindra

Department: Mechanical and Nuclear Engineering
Email: hbindra@ksu.edu
Website: http://www-personal.ksu.edu/~hbindra/
Phone: 785-532-3039

Education
Ph.D. 2010 Nuclear Engineering University of Illinois, Urbana, IL (US)
M.S. 2007 Nuclear Engineering University of Illinois, Urbana, IL (US)
B.E. 2002 Chemical Engineering Panjab University, Chandigarh (India)

Academic/Industrial Experience
• Assistant Professor, January 2014 – present
  Department of Mechanical and Nuclear Engineering, Kansas State University, Manhattan, KS
• Assistant Professor, August 2013 – December 2013
  Department of Chemical Engineering (Nuclear), University of Utah, Salt Lake City, UT
• Research Associate, 2010 – 2013
  CUNY Energy Institute, City University of New York, NY

Key Words Related to Your Activities
Nuclear Reactor Safety, Nuclear Thermal-hydraulics, Thermal Energy Storage, Transport theory

Short Description of Educational Interests
• Teaching and developing courses on nuclear thermal-hydraulics, reactor safety and nuclear reactor engineering
• Training new generation of nuclear engineers to research and design advanced passively safe nuclear reactors

Short Description of Research Interests
• Design of nuclear reactors, which are passively safe even in externally initiated scenarios.
• Making nuclear energy economically viable by integrating with energy storage.
• Development of computational-experimental frameworks for high temperature and energy system applications.

Three Recent Publications (with KSU students)
• Richard McCulloch, Hitesh Bindra, Coupled radiative and conjugate heat transfer in participating media using lattice Boltzmann methods, Computers & Fluids, Article in Press, 2015

Recent Research/Outreach/Extension Projects (limit to three)
• Experimental Investigation of Convection and Heat Transfer in the Reactor Core for a VHTR, Nuclear Energy University Programs, Department of Energy, 2015-2018, $180,000, KSU PI: Hitesh Bindra, (Subcontract from CUNY)
• NRC Graduate fellowship program, Nuclear Regulatory Commission, 2014-2018, $396,000, Pi- William Dunn, Co-PI Hitesh Bindra, Jeremy Roberts

Hardware/Equipment Capabilities within Your Research Activities
High temperature thermal imaging system, SEM, Confocal microscope, Spectroscopy tools

Software/Simulation Capabilities within Your Research Activities
Commercial CFD and Structural analysis software: CFX, Fluent, and COMSOL, Multi-physics LBM, Support Vector Machines
Deandra Cassone

**Department:** Industrial and Manufacturing Systems Engineering  
**Email:** dtc4455@k-state.edu  
**Website:** http://olathe.k-state.edu/people/faculty/cassone.html  
**Phone:** (785) 532-5606

### Education

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<td>Industrial Engineering</td>
<td>Kansas State University</td>
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<td>M.S.</td>
<td>1985</td>
<td>Industrial Engineering</td>
<td>Kansas State University</td>
<td>Manhattan, KS</td>
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<td>B.S.</td>
<td>1982</td>
<td>Industrial Engineering</td>
<td>Kansas State University</td>
<td>Manhattan, KS</td>
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### Academic/Industrial Experience

- **Associate Professor,** Kansas State University, Manhattan, KS, October 2015 – present
- **Associate Adjunct Professor,** Missouri University of Science and Technology, Rolla, MO, August 2008-Present
- **Director of Business Applications,** HTX/IBES Inc., Manhattan, KS, January 1985 – October 2005

### Key Words Related to Your Activities

- Decision science, real-world methods applications, decision making methods, quantitative methods, operations research, supply chain management and project management.

### Short Description of Educational Interests

Educational interests include instructing students in the application of decision science methods in business, corporate decision-making, supply chain management, data analysis, statistical analysis, economic analysis and project management.

### Short Description of Research Interests

Developing innovative solutions to complex problems by assessing environment characteristics, performing data and statistical analysis and integrating decision science methods to develop approaches to support corporate decision making. Utilizing a “tool kit” of methods in a broad range of operational environments and functional areas to model complex environments.

### Three Recent Publications

- Shipping Aggregation in Mobile Phone Order Fulfillment, U.S. Patent No. 8,756,119 B1 (issued Jun 17, 2014. This patent is a repeatable process that is used to identify opportunities for order aggregation in the warehouse to reduce shipping costs in the telecommunication industry.

### Recent Research/Outreach/Extension Projects (limit to three)

- A compilation of practical decision science and analytical methods that have been used in industry and government to solve real-world problems. This research has been documented in the book, “The Science of Common Sense: Best Practical Decision Science Methods,” which will be published in September 2015.
James M. Chen

Department: Mechanical and Nuclear Engineering
Email: jmchen@ksu.edu
Website: www-personal.ksu.edu/~jmchen
Phone: 785-532-3428

Education
Ph.D. 2011 Mechanical and Aerospace Engineering George Washington University
M.S. 2007 Applied Mechanics National Taiwan University, Taiwan
B.S. 2005 Mechanical Engineering National Chung-Hsing University, Taiwan

Academic/Industrial Experience
- Assistant Professor, Kansas State University, August 2015 – present
- Assistant Professor, The Pennsylvania State University, the Altoona College, August 2012 – May 2015
- Visiting Assistant Professor, Indiana University-Purdue University Fort Wayne, August 2011-May 2012

Key Words Related to Your Activities
Computational solid/fluid mechanics, rational continuum thermomechanics, turbulence, applied/computational mathematics, theoretical mechanics, multiscale modeling, atomistic simulation, energy harvesting, high performance computing, fracture mechanics

Short Description of Educational Interests
Educate the public practical information improving the society with layman language and equip the next-generation engineers start-of-art knowledge for their innovative career

Short Description of Research Interests
Develop fundamental theories and utilize simulation based experiments for different physical problems in solids and fluids across different time/length scales and their applications

Three Recent Publications
- M. Lopez, James Chen, V. Polachko, A Multiscale study of the boundary development for microfluidic system, Molecular Simulation, Accepted for publication

Recent Research/Outreach/Extension Projects (limit to three)
- Multiscale Analysis of Vortex Formation behind an Oscillating Cylinder, NASA Pennsylvania Space Grant Consortium, PI, 1/1/2014-5/18/2015, $7,004
- Microstructural Evolution during Visco-Elastic-Plastic Deformation: Phase Field Model, Materials Research Institute, PI, 06/01/2014-08/31/2014, $10,000

Hardware/Equipment Capabilities within Your Research Activities
Access to campus-wide Beocat cluster system

Software/Simulation Capabilities within Your Research Activities
Significant use of free and/or open source scientific tools (e.g. OpenFOAM, SU2, ParaView, LAMMPS, VMD, Gmsh) along with the new theories our group develops for performing analysis and optimization of systems involving multi-scale and multi-physics
Melanie Derby

Department: Mechanical and Nuclear Engineering
Website: http://www.mne.ksu.edu/people/faculty/derby
Email: derbym@ksu.edu
Phone: 785-532-2606

Education

Ph.D. 2013 Mechanical Engineering Rensselaer Polytechnic Institute
M.S. 2010 Mechanical Engineering Rensselaer Polytechnic Institute
B.S. 2008 Mechanical Engineering Rensselaer Polytechnic Institute

Academic/Industrial Experience

- Assistant Professor, Mechanical and Nuclear Engineering, Kansas State University, Manhattan, KS, August 2013-present

Key Words Related to Your Activities
Heat transfer, energy, condensation heat transfer, multi-phase flow, mini- and micro-scale convective heat transfer, thermal management, building energy, humidity

Short Description of Educational Interests
- Teach undergraduate and graduate classes in energy, heat transfer, fluid dynamics, and engineering design
- Create outreach activities to engage K-12 students and spark an interest in science and engineering

Short Description of Research Interests
- Increase fundamental understanding of condensation heat transfer
- Enhance condensation heat transfer on hydrophobic surfaces for applications such as power plant condensers
- Understand the role of humidity in occupied buildings
- Use natural systems in conjunction with conventional HVAC systems to reduce energy consumption
- Multi-phase oil and water flows

Three Recent Publications


Hardware/Equipment Capabilities within Your Research Activities
Heat transfer measurements
Water baths and chillers
Leica microscope and Fastec camera for flow visualization
Flow condensation loop
Eric J. Fitzsimmons

Department: Civil Engineering
Website: http://www.ce.ksu.edu/people/faculty/fitzsimmons/
Email: fitzsimmons@ksu.edu
Phone: 785-532-0889

Education
Ph.D. 2011 Civil Engineering (Transportation) Iowa State University, Ames, IA
M.S. 2007 Civil Engineering (Transportation) Iowa State University, Ames, IA
B.S. 2005 Civil Engineering Iowa State University, Ames, IA

Academic/Industrial Experience
- Assistant Professor, Kansas State University, August 2015 – present
- Visiting Assistant Professor, Kansas State University, 2014 – 2015
- Post Doctoral Research, University of Kansas, 2011 – 2014

Key Words Related to Your Activities
Rural and urban highway and intersection safety and operations, site-based vehicle data collection and reduction strategies, railroad engineering, work zone safety, law enforcement applications, engineering education

Short Description of Educational Interests
- Teaching undergraduates and graduates the importance of transportation in their daily lives through courses and research

Short Description of Research Interests
- Creating safer roads for all drivers through research, design, and enforcement in both rural and urban environments
- Utilize technology and data to predict events and how to respond to these events on the roadway

Three Recent Publications

Recent Research/Outreach/Extension Projects (limit to three)
- “Updating the Lane Closure Guide for Urban Freeways in the Kansas City Metropolitan Area,” $60,161. Funded by the Kansas Department of Transportation. PI: Eric Fitzsimmons; Co-PI: Sunanda Dissanayake
- “Class III / Short line System Inventory to Determine 129,844 kg (286,000 lbs.) Railcar Operational Status in Kansas,” $50,000. Funded by the Kansas Department of Transportation. PI: Eric Fitzsimmons; Co-PI: Stacey Tucker
- “Demonstration of the usRAP program in Kansas,” Funded for $50,000 by the Kansas Department of Transportation. PI: Eric J. Fitzsimmons; Co-PI: Sunanda Dissanayake

Hardware/Equipment Capabilities within Your Research Activities
- Roadway data collection equipment (LiDAR, pneumatic road tubes, Wavetronix, count board), traffic control systems and ITS deployment tools

Software/Simulation Capabilities within Your Research Activities
- ArcGIS, VISSIM, SYNCHRO, TransCAD
Daniel Flippo

**Department:** Biological and Agricultural Engineering  
**Website:** [http://www.bae.ksu.edu/people/faculty/flippo/index.html](http://www.bae.ksu.edu/people/faculty/flippo/index.html)  
**Email:** dkflippo@ksu.edu  
**Phone:** 785-532-2929

**Education**

- **Ph.D.** 2009 Mechanical Engineering, University of Oklahoma
- **M.S.** 2005 Mechanical Engineering, Wichita State University
- **B.S.** 1994 Mechanical Engineering, Kansas State University

**Academic/Industrial Experience**

- Assistant Professor, Biological and Agricultural Engineering, Kansas State University, Manhattan, KS, 2013-present
- Senior Engineer, John Deere Product Engineering Center, Waterloo, IA, 2011 to 2013
- Adjunct Instructor, University of Oklahoma, Norman, OK, 2009 to 2011
- Design Engineer, Cessna Aircraft Co, Wichita, KS, 1997 to 2005

**Key Words Related to Your Activities**

Agriculture, Automation, Mechatronics, Precision Machines, Robotics, Wheel to soil interaction

**Short Description of Educational Interests**

- Educating undergraduates and graduates in the design and role of agricultural machines.

**Short Description of Research Interests**

Blending of automation and agriculture, including the transfer of power, automation, mechatronics, and wheel to soil interaction.

**Three Recent Publications**


**Hardware/Equipment Capabilities within Your Research Activities**

Strain Gauges and Force Torque Sensors, HAAS CNC Milling

**Software/Simulation Capabilities within Your Research Activities**

Matlab, Atmel and Propellor embedded systems, Alibre CAD, ProE Manufacturing, Labview, C, Diptrace, and LaTeX.
Ryan R. Hansen

**Department:** Chemical Engineering  
**Website:** http://www.che.ksu.edu/people/hansen/  
**Email:** rrhansen@ksu.edu  
**Phone:** 785-532-0625

**Education:**
- Ph.D. 2008  Chemical Engineering  University of Colorado, Boulder, CO (USA)
- B.Sc. 2001  Chemical Engineering  Colorado School of Mines, Golden, CO (USA)

**Academic/Industrial Experience**
- Assistant Professor, Kansas State University, 2015-present
- Research Scientist, Oak Ridge National Laboratory, 2014 –2015
- Postdoctoral Scholar, Oak Ridge National Laboratory, 2012-2013
- Postdoctoral Scholar, Colorado School of Mines, 2009-2012
- Associate Engineer, Parsons Engineering, 2001 –2003

**Keywords Related to Your Activities**
- Biological interfaces, biofilms, biodetection, microfluidics, nanofabrication, polymeric materials

**Short Description of Educational Interests**
- Transport Phenomena I and II (CHE 530, CHE 531)

**Short Description of Research Interests**
- High-content screening platforms for characterizing bacterial communities
- Polymeric materials for diagnostic and biosensing applications
- Biocompatible micro- and nano-patterning techniques

**Three Recent Publications**

**Recent Research/Outreach/Extension Projects**
1. Microwell Arrays for High-Throughput Investigation of Microbial Interactions (U.S. Dept. of Energy)
2. Bioactive Polymer Scaffolds for High Avidity Cell Capture and Proliferation (U.S. Dept. of Energy)
3. Characterization of Shear-Specific Biomarkers for Von Willebrand Disease Using Microfluidic Devices (American Heart Association)

**Hardware/Equipment Capabilities within Your Research Activities**
- Inverted epifluorescent microscope (Nikon Ti-E) with automated stage for live cell microscopy.
- Stage top incubator (Tokai Hit) with digital gas mixer for cell culture experiments
- Multi-mode microplate reader (Biotek) and bacterial culture equipment
Mei He

Department: Department of Biological and Agricultural Engineering  
Email: meih@k-state.edu
Website: http://www.bae.ksu.edu/people/faculty/he/index.html  
Office: K-State Olathe, 22201 W. Innovation Dr., Olathe, KS 66061-1304  
Phone: 913-307-7383

Education
PostDoc  2011  Bioengineering  University of California-Berkeley  
Ph.D.  2008  Chemistry  University of Alberta, Canada,  
M.S.  2003  Pharmaceutical Chemistry  Chongqing University, China  
B.S.  2000  Chemical Engineering  Chongqing University, China

Academic/Industrial Experience
- Assistant Professor, Department of Biological and Agricultural Engineering, Kansas State University, 2014 - present  
- Senior Scientist, Department of Pathology and Laboratory Medicine, University of Kansas Medical Center, 2012 - 2013

Key Words Related to Your Activities
Nano/Biotechnology and Bioengineering, Point-of-Care Biomedical Devices, Microfluidic Technology

Short Description of Educational Interests
Perpetuating knowledge and inspiring learning is the core of my teaching philosophy. I am strongly committed to motivating student to learn the skills of critical thinking and problem solving, with interests in teaching of Biotechnology, Biomedical Engineering, and Nano-Biotechnology.

Short Description of Research Interests
My research aims to integrate nano-biotechnology and bioengineering approaches for quantitative study of biological systems, with particular applications in disease diagnostics, medical treatment, and biologically-inspired devices.

Three Recent Publications
  Top-scoring Altmetrics article published in Lab on a Chip (August-October 2014)  
  KU today news: New 'lab-on-a-chip' could revolutionize early diagnosis of cancer  
  ScienceDaily: Feature Research

Recent Research/Outreach/Extension Projects
- K-State Johnson Cancer Research Center Innovative Research Award, 2014  
- Z. Zhao (Undergrad), M. He*, Rapid microfluidic ExoSearch for early diagnosis of ovarian cancer, 13th Annual KINBRE Symposium (Kansas IDeA Network of Biomedical Research Excellence), Jan 2015, Topeka.  
  2015 K-INBRE Symposium Best Poster Award

Hardware/Equipment Capabilities within Your Research Activities
SEM, TEM, Lithography, NanoFabrication, Photo-spectrometer, FL Microscopic Imaging, Bioseparation Apparatus, Western Blotting/ELISA, Histology Imaging

Software/Simulation Capabilities within Your Research Activities
COMSOL Multiphysics, AutoCAD, Metamorph Image Analysis
Jessica Heier Stamm

Department: Industrial and Manufacturing Systems Engineering
Email: jlhs@k-state.edu
Website: http://www.imse.ksu.edu/people/faculty/heier_stamm/
Phone: 785-532-3726

Education
Ph.D. 2010 Industrial and Systems Engineering Georgia Institute of Technology, Atlanta, GA
B.S. 2004 Industrial Engineering, Music Minor Kansas State University, Manhattan, KS

Academic/Industrial Experience
- Assistant Professor, December 2010 – present

Key Words Related to Your Activities
Supply chain and logistics engineering, operations research, game theory, humanitarian operations, public health

Short Description of Educational Interests
- Teaching undergraduate and graduate courses in operations research, game theory, decision analysis, and logistics
- Developing teaching materials to introduce students to applications of industrial engineering tools in humanitarian and public health settings

Short Description of Research Interests
- Using operations research and game theory to design and analyze systems in which decisions are decentralized
- Applying quantitative methods to the design and improvement of humanitarian relief and public health systems

Three Recent Publications

Recent Research/Outreach/Extension Projects (limit to three)

Hardware/Equipment Capabilities within Your Research Activities
- Some analyses benefit from access to computing cluster (e.g. K-State’s Beocat)

Software/Simulation Capabilities within Your Research Activities
- IBM ILOG CPLEX Optimization Studio, Esri ArcGIS
Isaya Kisekka

Department: Biological and Agricultural Engineering
Email: ikisekka@ksu.edu
Website: http://www.wkarc.org/programs/irrigation/gardencity/
Phone: 620-276-8286

Education
Ph.D. 2013 Agricultural and Biological Engineering University of Florida
M.S. 2007 Agricultural and Biological Engineering University of Florida
B.S. 2002 Agricultural Engineering Makerere University Uganda

Academic/Industrial Experience
- Assistant Professor, Kansas State University, 2013-Present
- Research Assistant, University of Florida, 2007 - 2013
- Research Engineer, National Agricultural Research Organization (NARO), Uganda, 2004 - 2007
- Water Resources Engineer, Balton (U) Ltd Kampala, Uganda, 2002 - 2004

Key Words Related to Your Activities
Agricultural Water Management, Irrigation, Hydrology, Crop Modeling, Global Food Security

Short Description of Educational Interests
Student mentoring through research and outreach activities

Short Description of Research Interests
Dr. Kisekka’s research utilizes a combination of field experiments and mathematical modeling to understand plant response to limited water and develop economically and environmentally sustainable deficit irrigation and water management technologies for row crop production e.g., corn, wheat, grain sorghum and forages.

Three Recent Publications

Recent Research Projects
- Forage Sorghum as an Alternative Crop for Water Limited Cropping Systems (USDA, OAP)
- Mobile Drip Irrigation for Water Limited Crop Production (Global Food Systems)

Hardware/Equipment Capabilities within Your Research Activities
Neutron probes (Model 503DR), Center Pivot with VRI and MDI capabilities, Lateral move irrigation system (model 8000, Valmont Corp., Valley, NE), Bowen ratio system for ET measurement, Unmanned Aerial Vehicle, Thermal Infrared Camera, Infrared Radiometers, Soil water Sensors, LP-80 Leaf Area Index meter, Leaf Area Meter, NVDI sensor

Software/Simulation Capabilities within Your Research Activities
RZWQM2, DSSAT, WAVE, SimLab, SAS and Sigmaplot for statistics and graphing
Dong Lin

Department: Industrial and Manufacturing Systems Engineering
Website: https://sites.google.com/site/smilerdongslab/
Email: dongl@ksu.edu
Phone: (785)5323728

Education
Ph.D. 2013 Mechanical Engineering Purdue University, Indiana
M.S. 2009 Mechanical Engineering Univ. of Nebraska, Lincoln, NE
M.S. 2007 Mechanical Engineering Huazhong Univ. of Science & Technology, China
B.S. 2004 Mechanical Engineering Harbin Institute of Technology (HIT), China

Academic/Industrial Experience
• Assistant Professor, August 2015 – present

Key Words Related to Your Activities
• Additive manufacturing, metal matrix composites, functional materials

Short Description of Educational Interests
• 3D printing, manufacturing processes

Short Description of Research Interests
Laser assisted additive manufacturing of metal composites, laser processing, mechanical behavior of metal components, additive manufacturing of carbon fiber composites, and additive manufacturing of ultralight materials.

Three Recent Publications

Recent Research/Outreach/Extension Projects (limit to three)
• 3D printing of functional materials
• 2D nanomaterials based aerogel
• Additive manufacturing of metal composites

Hardware/Equipment Capabilities within Your Research Activities
• Nd:YAG laser and laser cutting and laser bonding

Software/Simulation Capabilities within Your Research Activities
• Solidworks
Bin Liu

Department: Chemical Engineering
Email: binliu@ksu.edu
Website: http://www.che.ksu.edu/people/liu/
Phone: 785-532-4331

Education
Ph.D. 2008 Chemical Engineering Colorado School of Mines
B.S. 2003 Chemical Engineering Dalian University of Technology

Academic/Industrial Experience
- Assistant Professor, Kansas State University, 2013 - present
- Postdoc, Carnegie Mellon University, January 2013 – July 2013
- Postdoc, Argonne National Laboratory, 2010-2012
- Postdoc, Colorado School of Mines, January 2009 – December 2009

Key Words Related to Your Activities
Chemical transformations of biomassic compounds, phase stability and O solubility in Fe-Ni-Al alloys, SOFC

Short Description of Educational Interests
Chemical Engineering Analysis I. Emphasis on concept and generalized approach to solving relevant chemical engineering and applied mathematics problems. Incorporate modern mathematics softwares and frontier information into lectures.

Short Description of Research Interests
Density functional theory (DFT) methodology, heterogeneous catalysis, surface chemistry, novel materials, and renewable energy generation

Three Recent Publications

Recent Research/Outreach/Extension Projects
- Phase VII: “Sustainable Energy and Education in Kansas (SEEK)” (formerly entitled Nano-Engineered Boron-Carbon-Nitrogen Materials for Energy,” Chris Sorensen (KSU lead PI), Information, and Sensing, $3,000,000 (direct costs), Kansas University Center for Research (National Science Foundation EPSCoR Program, Collaborator
- “Engineering the Electrical and Optical Properties of Atomically-Thick Boron-Nitride-Sheets via Functionalization,” Vikas Berry (KSU lead PI), $251,019 (direct costs), National Science Foundation, co-PI
- K-State Faculty mentoring program (pending)

Hardware/Equipment Capabilities within Your Research Activities
Beocat supercomputing cluster (KSU)

Software/Simulation Capabilities within Your Research Activities
VASP, Quantum Espresso, DACAPO, Materials Studio Visualizer, CP2K
Zifei Liu

Department: Biological & Agricultural Engineering
Email: Zifeiliu@ksu.edu
Website: https://bae.engg.ksu.edu/~zifeiliu/
Phone: 785-532-3587

Education
Ph.D. 2009 Biological & Agricultural Engineering North Carolina State University
M.S. 2005 Environmental Engineering University of Cincinnati
B.S. 1992 Atmospheric Science Nanjing University (China)

Academic/Industrial Experience
- Assistant Professor, Department of Biological & Agricultural Engineering, Kansas State University, Manhattan, 2012 – present
- Postdoctoral Research Associate, Departments of Animal Science and Biosystems & Agricultural Engineering, Michigan State University, 2010 – 2012
- Research Assistant, North Carolina State University, 2005 – 2009
- Research Assistant, University of Cincinnati, 2002 – 2005
- Environmental Engineer, Environmental Monitoring Center of Anhui Province, China, 1992 – 2002

Key Words Related to Your Activities:
Air quality, measurement, modeling, mitigation, extension, farm, animal operation, smoke, pasture burning

Short Description of Educational Interests
- Effective dissemination of research-based information to industries, regulators, and the public

Short Description of Research Interests
- Air quality monitoring and modeling, fate and transport of air emissions from agricultural sources, and cost effective mitigation strategies.

Three Recent Publications

Recent Research/Outreach/Extension Projects
- Meta-analysis of H2S, NH3, VOC, PM10, and PM2.5 emissions from swine productions in North America.
- Effectiveness of vegetative environmental buffers to reduce swine facility emissions.
- Mitigation of Air Emissions from Swine Buildings through the Photocatalytic Technology using UV/TiO2.

Hardware/Equipment Capabilities within Your Research Activities
TEI 450i H2S analyzer, INNOVA 1412i multi gas analyzer
Walter McNeil

**Department:** Mechanical and Nuclear Engineering  
**Email:** wmcneil@k-state.edu  
**Website:** http://www.mne.ksu.edu/  
**Phone:** 785-532-3379

**Education**

<table>
<thead>
<tr>
<th>Degree</th>
<th>Year</th>
<th>Field</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Ph.D.</td>
<td>2010</td>
<td>Nuclear Engineering</td>
<td>Kansas State Univ., Manhattan, KS</td>
</tr>
<tr>
<td>B.S.</td>
<td>2005</td>
<td>Mechanical Engineering</td>
<td>Kansas State Univ., Manhattan, KS</td>
</tr>
</tbody>
</table>

**Academic/Industrial Experience**

- **Assistant Professor,** August 2015 – present, Department of Mechanical and Nuclear Engineering, Kansas State University, Manhattan, KS
- **Nuclear Engineer/Physicist,** 2010-2015, Space and Naval Warfare Systems Center – Pacific (SPAWAR)

**Key Words Related to Your Activities**

- Radiological detection system design and development, Multi-disciplinary system design and system integration, system engineering, radiation sensor design, radiation detector test and evaluation, sensor ruggedizing and performance analysis, nuclear system design, nuclear electronics, radiological isotope identifier (RIID), radiological threat detection, localization, and Identification, mobile detection system R&D and T&E.

**Short Description of Educational Interests**

I strive to equip young engineers with sound techniques that will enhance their effectiveness in multidisciplinary design efforts including electrical, computational, mechanical, and software components; focusing on engineering communication and external communication with customers such that results will meet and exceed the demands of the community.

**Short Description of Research Interests**

Embedded system integration of radiological sensors, signal processing electronics, computational algorithms, and ergonomic mechanical/software design. Maximizing efficiency in component and system-level design for mobile radiation detection missions.

**Three Recent Publications**

- “R&D 100 Award”: R&D Magazine's top 100 technologically significant inventions of the year, for development of the Lithium Foil Proportional Gas Neutron Detector - 2014
- “R&D 100 Award”: R&D Magazine, Micro-structured Semiconductor Detector - 2009
- Patent No. 8519350: “Gas-filled neutron detectors having improved detection efficiency”

**Recent Research/Outreach/Extension Projects (limit to three)**

- Low-power signal processing for gamma-ray spectrometers and portable isotope identification systems.
- Low-power photon collection device for scintillator gamma-ray spectrometers.
- Underwater isotope detection system testing and development of background compensation of distributed radiological isotopes.

**Hardware/Equipment Capabilities within Your Research Activities**

- Cryogenic semiconductor sensor assemblies, Compton gamma-ray imager, Neutron and gamma-ray sensors, large scintillator gamma-ray spectrometers, deep sea vessel design, sensor packaging/integration services

**Software/Simulation Capabilities within Your Research Activities**

- Basic radiation transport modeling, radiation detection system performance modeling, alarm algorithm design and evaluation for detection, localization and isotope identification, software interface design for intuitive operation and efficient display of complex radiological sensor data.
Trisha Moore

Department: Biological & Agricultural Engineering
Email: tlcmoore@ksu.edu
Website: http://www.bae.ksu.edu/people/faculty/moore/index.html
Phone: 785-532-2911

Education (enter most current degree first)
Ph.D. 2011 Biological & Agricultural Engineering North Carolina State University, Raleigh, NC
M.S. 2008 Biological & Agricultural Engineering Kansas State University, Manhattan, KS
B.S. 2006 Biological & Agricultural Engineering Kansas State University, Manhattan, KS

Academic/Industrial Experience
Assistant Professor, December 2013 – present
Department of Biological & Agricultural Engineering, Kansas State University, Manhattan, KS
Postdoctoral Research Associate, November 2011 to November 2013
St. Anthony Falls Laboratory, University of Minnesota, Minneapolis, MN

Key Words Related to Your Activities
• Ecological engineering, low impact development, ecological restoration, watershed management, life cycle analysis

Short Description of Educational Interests
• Teaching and developing courses in ecological engineering, watershed management, and environmental hydrology and hydraulics at the graduate and undergraduate levels

Short Description of Research Interests
• Design and management of sustainable ecohydrological systems in human-dominated landscapes, ecological sustainability of biological production systems, impact of climate and landuse change on hydrologic systems,

Three Recent Publications

Recent Research/Outreach/Extension Projects (limit to three)
• Working with the City of Wichita to develop an integrated watershed water quality program between the Cities regulated system and agricultural producers within the Little Arkansas watershed.
• Assessing streambank erosion rates in the Little Arkansas watershed, and the capacity to predict erosion rates via semi-quantitative erosion indices (e.g., Rosgen’s BANCS model)
• Assessing carbon sequestration potential by a constructed wetland treating flue gas desulfurization effluent

Hardware/Equipment Capabilities within Your Research Activities
• ISCO automated water samplers, HACH colorimeter for water quality analyses

Software/Simulation Capabilities within Your Research Activities
• ESRI ArcGIS, EPA-SWMM, EPANET, INVEST
Russell J. Murdock

Department: Architectural Engineering and Construction Science
Website: http://www.are-cns.ksu.edu/people/faculty/russmurdock/
Email: rmurdock@ksu.edu
Phone: (785) 532-3571

Education:
B.S. 2000 Architectural Engineering Kansas State University, Manhattan, KS
M.S. 2000 Architectural Engineering Kansas State University, Manhattan, KS

Academic/Industrial Experience:
Kansas State University – Assistant Professor (2nd Year of Tenure Track) in ARE/CNS (August 2011 – Present)
Smith Seckman Reid, Inc (Nashville, TN) – Professional Engineer/Project Manager (June 2000 – August 2011)

Key Words Related to Your Activities:

Short description of educational interests:

Short description of research interests:

Three recent research/outreach/extension projects:
• Architectural Engineering Institute (part of ASCE) PE Exam Workshop (Electrical Committee) (July 2012)
• Architectural Engineering Institute (part of ASCE) PE Exam Committee Vice Chairman (2012-14)
• Architectural Engineering Institute (part of ASCE) Academic Council representative for Kansas State University (2012-13) and Chair of Committee (2013-2016)

Hardware/Equipment Capabilities within your research activities:
Seaton 223A - Architectural Engineering Lighting and Building Electrical Systems Laboratory (Non-Energized Demonstration Equipment)

Software/Simulation Capabilities within your research activities:
SKM Powertools - Specifically Dapper and Captor Modules - for Short Circuit and Selective Coordination Studies of Building Electrical Distribution Systems
Pratham Parameswaran

Department: Civil Engineering 
Website: http://www.ce.ksu.edu/people/faculty/index.html

Email: prathapp@ksu.edu  Phone: 785-532-1748

Education
Ph.D 2010 Environmental Engineering Arizona State University, Tempe, AZ 
M.S. 2005 Environmental Engineering Illinois Institute of Technology, Chicago, IL 
B.Tech 2003 Chemical Engineering Coimbatore Institute of Technology, India

Academic/Industrial Experience
• Assistant Professor, Civil Engineering, Kansas State University, Manhattan, KS, August 2015 – present 
• Associate Research Scientist, Swette Center for Environmental Biotechnology, The Biodesign Institute at Arizona State University, July 2012 – July 2015

Key Words Related to Your Activities
• Wastewater treatment, anaerobic digestion, microbial fuel cells, biofuels/microalgae, bioenergy

Short Description of Educational Interests
• Fundamental and applied courses in Environmental Engineering with specific focus on wastewater treatment at the undergraduate level.
• Graduate level courses on Advanced Environmental Biotechnology, Fuel cells: Chemical, Enzymatic, and microbial

Short Description of Research Interests
• Anaerobic digestion, pretreatment technologies for bioprocessing of wastes and biomass, 
• Microbial Electrochemical Cells for valuable products generation (electric power, hydrogen gas, and advanced oxidation products such as hydrogen peroxide), 
• Downstream resource capture from microalgae through Environmental Biotechnology, energy positive wastewater treatment, capture and reuse of energy and resources at the food-energy-water nexus in urban and agricultural runoffs

Three Recent Publications

Recent Research/Outreach/Extension Projects
• NSF CBET 1335884 Modeling wastewater sludge hydrolysis aided by high temporal resolution measurements through microbial electrochemistry PI: Cesar I Torres, ASU Co-PI: P Parameswaran; $318,391; 2013 – 2016 
• NSF CBET 1509933 Targeted saturated fatty acids synthesis by microbial biohydrogenation and its superior extraction from microalgae biomass through selective fermentation PI: Bruce E Rittmann, ASU Co-PI: P Parameswaran; $ 309,443; 2015-2018

Hardware/Equipment Capabilities within Your Research Activities
High Performance Liquid Chromatography (HPLC) for organic acids, alcohols, and sugars, Gas Chromatography, Total and Dissolved Organic Carbon analysis, Potentiostat based chronoamperometry and cyclic voltammetry, Spectrophotometry for organic and inorganic chemical analyses, DNA quantification and Quantitative PCR
Pavithra Prabhakar

**Department:** Computing and Information Sciences  
**Website:** http://people.cis.ksu.edu/~pprabhakar  
**Email:** pprabhakar@ksu.edu  
**Phone:** 785-532-6250

**Education**
- **Ph.D.** 2011 Computer Science  
  Univ. of Illinois, Champaign, Illinois
- **M.S.** 2010 Applied Mathematics  
  Univ. of Illinois, Champaign, Illinois
- **M.S.** 2006 Computer Science and Automation  
  Indian Institute of Science, Bangalore
- **B.S.** 2004 Computer Science and Engineering  
  National Institute of Tech., Warangal

**Academic/Industrial Experience**
- Assistant Professor, Computing & Information Sciences, Kansas State University, August 2015 – present
- Assistant Research Professor, IMDEA Software Institute, Madrid, Spain, September 2012 – August 2015
- CMI Postdoctoral Scholar, California Institute of Technology, August 2011 - August 2012

**Key Words Related to Your Activities**
- Hybrid and Cyber-Physical Systems
- Formal Verification and Synthesis
- Automata Theory and Logic

**Short Description of Educational Interests**
- CIS 890: Formal Verification of Hybrid Systems to graduate students
- CIS 770: Formal Languages Theory to graduate students

**Short Description of Research Interests**
- **Formal methods:** Verification, Synthesis, Model-checking, Abstractions, Compositional analysis;
- **Cyber-physical systems:** Safety and stability analysis, synthesis, applications to robotics & aeronautics.
- **Logic and automata theory:** Timed temporal logics and automata, complexity, expressiveness.

**Three Recent Publications**

**Software/Simulation Capabilities within Your Research Activities**
- HARE: Hybrid Abstraction Refinement Engine.
- BEAVER: Bounded Error Approximation based Verifier.
Punit Prakash

Department: Electrical and Computer Engineering

Email: prakashp@k-state.edu

Website: http://ece.k-state.edu/people/faculty/prakash.html

Phone: (785) 532-3358

Education:

Ph.D. 2008 Biomedical Engineering University of Wisconsin-Madison
M.S. 2006 Biomedical Engineering University of Wisconsin-Madison
B.S. 2004 Electrical and Computer Engineering Worcester Polytechnic Institute

Academic/Industrial Experience

• Assistant Professor, Department of Electrical and Computer Engineering, August 2012 – Present
• Research Specialist, November 2009 - July 2012; Postdoctoral Scholar, October 2008-October 2009, Department of Radiation Oncology, University of California, San Francisco

Key Words Related to Your Activities

Image-guided interventions; microwave ablation and hyperthermia; therapeutic medical devices; bioinstrumentation

Short Description of Educational Interests

• Development of graduate biomedical engineering courses - therapeutic medical devices; medical imaging systems
• Teaching undergraduate medical instrumentation and bioengineering design courses.

Short Description of Research Interests

• Microwave, radiofrequency, and ultrasound technology for image-guided thermal ablation and hyperthermia
• Physics-based models for patient-specific treatment planning of image-guided thermal ablation
• Mathematical modeling of biological responses to thermal interventions

Three Recent Publications

• Curto S, Prakash P. Design of a compact antenna with flared groundplane for a wearable breast hyperthermia system. International Journal of Hyperthermia, Accepted for publication, 2015. DOI: 10.3109/02656736.2015.1063170
• Curto S, Taj-Eldin M, Fairchild D, Prakash P. Microwave ablation at 915 MHz vs. 2.45 GHz: a theoretical and experimental investigation. Medical Physics, Accepted for publication, 2015.

Recent Research/Outreach/Extension Projects

• Innovative Research Award, Johnson Cancer Research Center Theoretical and experimental investigation of 5.8 GHz microwave antennas for conformal thermal tumor ablation, PI: P.Prakash; 05/01/2015-4/30/2016

Hardware/Equipment Capabilities within Your Research Activities

Vector network analyzer (1-6 GHz); spectrum analyzer; computer-controlled SAR/E-field scan tank with 3-axis stage; RF power amplifiers (80 W, 800-2700 MHz); custom apparatus for broadband dielectric and magnetic measurements; 14 T small-animal MRI scanner

Software/Simulation Capabilities within Your Research Activities

Scientific computing workstation (16 core, 64 GB memory), CST Microwave Studio, COMSOL Multiphysics, Matlab, Labview
Venkatesh-Prasad Ranganath

**Department:** Computing and Information Sciences  
**Website:** http://people.cis.ksu.edu/~rvprasad

**Email:** rvprasad@ksu.edu  
**Phone:** (785)-532-6375

**Education**

- **Ph.D.** 2006  
  Computer Science  
  Kansas State University, Manhattan, KS, USA

- **M.S.** 2002  
  Computer Science  
  Kansas State University, Manhattan, KS, USA

- **B.E.** 1997  
  Computer Science and Engg.  
  Bangalore University, Bangalore, Karnataka, India

**Academic/Industrial Experience**

- Assistant Professor, Kansas State University, USA. August 2015 – present
- Visiting Assistant Professor, Kansas State University, USA. Feb 2014 – August 2015
- Researcher, Microsoft Research, India. August 2007 – August 2013

**Key Words Related to Your Activities**

Software Engineering, Programming Languages, Empirical Methods, Data Science

**Short Description of Educational Interests**

Educate students to become well grounded, proficient, and socially responsible software engineers and computer scientists with good communication and data analysis skills.

**Short Description of Research Interests**

Explore, study, and leverage the synergies between programming systems (language, analysis, tools, and methodologies), empirical and probabilistic approaches, and utility computing to enable easy and correct construction and maintenance of software systems.

**Three Recent Publications**

- Communication Patterns for Interconnecting and Composing Medical Systems – **Venkatesh---Prasad Ranganath**, Yu Jin Kim, John Hatcliff, and Robby. EMBC’15
- Extrinsic Influence Factors in Software Reliability: A Study of 200,000 Windows Machines – Christian Bird, **Venkatesh---Prasad Ranganath**, Thomas Zimmermann, Nachiappan Nagappan, and Andreas Zeller. ICSE’14

**Recent Research/Outreach/Extension Projects**

- Communication patterns in medical systems.
- Patterns-based approach to trace comparison and its application to software engineering tasks.
Jeremy Roberts

Department: Mechanical and Nuclear Engineering  
Email: jaroberts@ksu.edu

Website: http://www.mne.ksu.edu/people/faculty/roberts  
Phone: 785-532-7182

Education
Ph.D. 2014 Nuclear Science and Engineering  
MIT, Cambridge, MA
B.S./M.S. 2009 Nuclear Engineering  
U. Wisconsin, Madison, WI

Academic/Industrial Experience:
• Assistant Professor, August 2013—present, Department of Mechanical and Nuclear Engineering, Kansas State University, Manhattan, KS

Key Words Related to Your Activities
nuclear reactor physics; neutron transport; high-performance computing

Short Description of Educational Interests
• Teaching undergraduate and graduate courses in nuclear science and engineering, with a specific focus on nuclear reactor physics and radiation transport
• Providing cross-disciplinary opportunities to learn and apply computational methods

Short Description of Research Interests
Applying advanced computational techniques to reactor analysis, with the ultimate goal of developing tools for predictive simulation

Three Recent Publications

Recent Research/Outreach/Extension Projects
• "Development of a High-Fidelity Model with Depleted Fuel for the Kansas State University TRIGA Mark II Reactor," Nuclear Regulatory Commission, $224,935. 5/15—4/18. PI: Roberts (with Geuther and McGregor at KSU).

Hardware/Equipment Capabilities within Your Research Activities
Group compute cluster [≈ 100 cores]; contributed hardware to and have guaranteed use of Beocat [≈ 3000 cores]; Intel Xeon Phi workstation

Software/Simulation Capabilities within Your Research Activities
Significant use of (1) free and/or open-source tools (e.g., PETSc, SLEPC) as core pieces of our group's research codes (Detran, Serment, and Poropy) and (2) numerous production-level tools (e.g., SCALE, Serpent, MCNP) for analyzing nuclear systems
Education
Ph.D. 2011 Biosystems Engineering Auburn University, Auburn, AL
M.Tech 2001 Farm Power Machinery, Computer Punjab Agricultural University, Ludhiana, India
Elec. minor
B.Tech 1998 Agricultural Engineering Punjab Agricultural University, Ludhiana, India

Academic/Industrial Experience
- Assistant Professor, Biological and Agricultural Engineering, Kansas State University, Manhattan, KS, October 2013 – present
- Post-Doctoral Research Associate, Center for Precision and Automated Agricultural Systems, Washington State University, Prosser, WA, February 2012 – September 2013
- Assistant Professor, Farm Power and Machinery, Punjab Agricultural University, Ludhiana, PB, India, March 2003 – January 2012

Key Words Related to Your Activities
Precision Ag., machine systems for crop production, sensors, control systems, CAN, data management and analysis

Short Description of Educational Interests
- Teaching undergraduate and graduate courses in power and machinery, instrumentation, and data acquisition
- Developing teaching material on precision agricultural technologies, and field data management and analysis

Short Description of Research Interests
- Development and evaluation of precision agriculture technologies for crop production with particular interest in control systems, CAN, sensors, and automation.
- Crop production and machine performance data management and analysis for intelligent decision-making.

Three Recent Publications

Recent Research/Outreach/Extension Projects
- Precision Agriculture and Precision Forestry- Alabama. *USDA-CSREES*
- Evaluation of Automatic Section Control Technology for Agricultural Sprayers. *Alabama Soybean Producers.*
- Development and optimization of Solid-Set Canopy Delivery Systems for Resource-Efficient, Ecologically Sustainable Apple and Cherry Production. USDA-SCRI

Hardware/Equipment Capabilities within Your Research Activities
Instrumentation and data acquisition, control systems, designing virtual simulation, crop sensors, GPS/GNSS, CAN

Software/Simulation Capabilities within Your Research Activities
LabVIEW, MATLAB, SAS, ArcGIS, Solid Edge, Visual Basic
Aleksey Sheshukov

Education
Ph.D. 1996 Environmental Fluid Mechanics Kazan State University, Russia
M.S. 1991 Theoretical Mechanics & Applied Mathematics Kazan State University, Russia

Academic/Industrial Experience
Assistant Professor, Biological and Agricultural Engineering, Kansas State University, 2012 – present
• Research Assistant Professor, Biological and Agricultural Engineering, Kansas State University, 2008 – 2012
• Research Associate, Bioproducts and Biosystems Engineering, Univ. of Minnesota, 2004 – 2008
• Visiting Assistant Professor, U.S. Army High Performance Computing Research Center, Univ. of Minnesota, 1999 – 2003
• Assistant Professor, Kazan State Power Engineering University, Kazan, Russia, 1996-1998,

Key Words Related to Your Activities
Hydrology; environmental quality; erosion; ephemeral gullies; climate generation model; climate change; subsurface flows

Short Description of Educational Interests
Hydrologic modeling of small watersheds; Soil erosion; Transport in biological systems; GIS in water resources

Short Description of Research Interests
Hydrologic modeling of watersheds using computer-based tools; Monitoring and modeling of ephemeral gully erosion; Climate change impacts on hydrologic processes and water-quality

Three Recent Publications

Recent Research/Outreach/Extension Projects
• Assessment of geomorphological properties and model development of ephemeral gully erosion in agricultural watersheds
• Watershed Restoration and Protection Strategies (WRAPS) – Water-quality assessment of non-point source pollution in Kansas watersheds
• Impacts of climate change on the hydrology of Kansas watersheds using ensembles of downscaled Global Climate Model predictions

Software/Simulation Capabilities within Your Research Activities
• WINDS (Weather Input for Nonpoint Data Simulation) - A stochastic weather generator and tool for prediction of daily climate variables and intra-storm characteristics using statistics of historical records
David Thompson

**Department:** Electrical & Computer Engineering  
**Email:** davet@k-state.edu  
**Website:** http://ece.k-state.edu/faculty/davet/index.html  
**Phone:** 785-532-5600

**Education**
- Ph.D. 2012 Biomedical Engineering  
  University of Michigan, Ann Arbor, MI
- M.S.E 2011 Electrical Engineering: Systems  
  University of Michigan, Ann Arbor, MI
- M.S. 2009 Biomedical Engineering  
  University of Michigan, Ann Arbor, MI
- B.S. 2006 Electrical Engineering  
  Kansas State University, Manhattan, KS

**Academic/Industrial Experience**
- Assistant Professor, Kansas State University, Electrical & Computer Engineering, Manhattan, KS, 2014-present
- Post-Doctoral Fellow, August 2012 – present
- Chestek Lab, Department of Biomedical Engineering, University of Michigan, Ann Arbor, MI

**Key Words Related to Your Activities**
- Low-power electronics, implantable or wearable medical devices, brain-computer interface, electroencephalogram research, embedded systems, assistive technology

**Short description of Educational Interests**
- Undergraduate and graduate embedded systems courses and laboratories
- Engineering fundamental courses such as circuit theory; introductory-level courses

**Short description of Research Interests**
- Embedded systems design for medical or veterinary use, focused on implantable or wearable systems
- Assistive technology development, including brain-computer interface, for people with severe movement disorders
- Performance measurement for brain-computer interface

**Three Recent Publications**

**Recent Research/Outreach/Extension Projects**
- Volunteered for WISE (Women In Science and Engineering) program at University of Michigan, a program to encourage middle-school girls to consider STEM careers.

**Hardware/Equipment Capabilities within Your Research Activities**
- Printed Circuit Board (PCB) prototyping, design, layout, and assembly; standard EE tools such as oscilloscopes; electroencephalogram (EEG)

**Software/Simulation Capabilities within Your Research Activities**
- MATLAB, Simulink, EAGLE, Multisim/Ultiboard, C/C++ and embedded C
Stacey E. Kulesza

Department: Civil Engineering
Email: sekulesza@ksu.edu
Website: http://www.ce.ksu.edu/people/faculty/kulesza/
Phone: 785-532-5863

Education
Ph.D. 2013 Civil Engineering – Geotechnical Texas A&M University
M.E. 2009 Civil Engineering – Geotechnical Texas A&M University
B.S. 2008 Civil Engineering Texas A&M University

Academic/Industrial Experience
• Assistant Professor, August 2013 – present, Department of Civil Engineering, Kansas State University, Manhattan, KS

Key Words Related to Your Activities
Nondestructive testing, soil erosion potential, near surface geophysics, unknown bridge foundations, levee construction and evaluation, foundation engineering, in-situ and laboratory testing

Short Description of Educational Interests
• Teaching undergraduate soil mechanics using in class demonstrations and laboratory experiments to supplement geotechnical theory and fundamentals
• Teaching and developing graduate courses in geotechnical engineering with emphasis on standard and advanced testing methods to measure in situ conditions for design applications and projects

Short Description of Research Interests
• Nondestructive testing and monitoring of deteriorating infrastructure
• Advanced soil testing and near surface geophysical measurements to gain insight on the in situ integrity of aging infrastructure and natural materials in order to support the global initiative of sustainability
• Engineering education

Three Recent Publications

Recent Research/Outreach/Extension Projects

Hardware/Equipment Capabilities within Your Research Activities
Electrical resistivity imaging, induced polarization imaging, erosion function apparatus (EFA) testing, ground penetrating radar (GPR), equipment for standard geotechnical testing

Software/Simulation Capabilities within Your Research Activities
Time domain electrical resistivity and induced polarization imaging, MATLAB, LabVIEW
Eugene Vasserman

Department: Computing and Information Sciences
Website: http://www.cis.ksu.edu/~eyv/
Email: eyv@ksu.edu
Phone: 785.532.7944

Education:
Ph.D. 2010 Computer Science University of Minnesota
M.S. 2008 Computer Science University of Minnesota
B.S. 2003 Biochemistry and Neuroscience University of Minnesota

Academic/Industrial Experience:
Assistant Professor, Dept. of Computing and Information Sciences, Kansas State University, 2010–present

Key Words Related to Your Activities:
Computer and information security; network security; privacy, anonymity, and censorship resistance; medical and cyber-physical systems security; security usability; security education

Short Description of Educational Interests
• Teaching network security concepts to students of varied backgrounds
• Effective security education for non-engineers
• Effective security education for the general public (little to no computing background)

Short Description of Research Interests
• Safe and secure medical device coordination (protocols, middleware)
• Internet-scale censorship-resistant systems which can resist large (nation-state-level) adversaries
• Security in mobile device networks
• Computer security (e.g. encryption, safe web browsing) usable by non-specialists
• Security education for those with minimal background in computing

Three Recent Publications

Recent Research/Outreach/Extension Projects
• AAMI / UL 2800 Working group 03 (compositional medical safety)
• GROW (anonymity on the Internet)
• Middle-school outreach (security education – anonymity on the Internet)

Hardware/Equipment Capabilities within Your Research Activities
• EEG devices (consumer-grade)
• Dual-extrusion 3D printer

Software/Simulation Capabilities within Your Research Activities
• Large network simulation (~3,000,000 nodes)
Heidi Wagner

Department: Architectural Engineering and Construction Science
Email: hwagner@k-state.edu
Website: http://www.are-cns.ksu.edu/people/faculty/heidiwagner/index.html
Phone: 785-532-3578

Education

- PhD 2015 (ABD) Design, Housing Studies, University of Minnesota, Twin Cities
- MS 2010 Construction Management and Engineering, North Dakota State University, Fargo

Academic/Industrial Experience

- Assistant Professor, Architectural Engineering and Construction Science and Management, August 2015 – present
- Carpenter, beginning in 1994, to subsequent promotion as project manager; various companies in residential and light commercial construction; various times and locations including Minnesota and Vermont

Short Description of Educational Interests

- Construction project management, materials and methods, sustainability, and built environment undergraduate education

Short Description of Research Interests

- Sustainable built environment, Construction management curriculum analysis including integration of hands-on building, Construction workforce demographics, Women working in the construction industry, Multi-disciplinary research collaborations

Three Recent Publications


Recent Research/Outreach/Extension Projects

- A University of Michigan’s National Center for Diversity Emerging Diversity Scholar (2015). Awarded to candidates nearing the completion of PhDs and having outstanding potential to contribute to diversity-related research, practice, and teaching
Lisa Wilken

**Department:** Biological and Agricultural Engineering
**Website:** http://www.bae.ksu.edu/
**Email:** lwilken@ksu.edu
**Phone:** (785)532-3327

**Education:**
- **Ph.D.** 2009 Biological & Agricultural Engineering, Texas A&M University
- **B.S.** 2003 Biological & Agricultural Engineering, Kansas State University

**Academic/Industrial Experience:**
- Assistant Professor, Kansas State University, 2012-present
- Assistant Research Scientist & Lecturer, Texas A&M University, 2009-2012

**Key Words Related to Your Activities:**
Bioseparations, protein purification, extraction, downstream processing of biomolecules, recombinant protein, transgenic plants, enzymatic oil extraction

**Short Description of Educational Interests**
Courses in biological engineering such as Bioseparations Engineering, Properties of Biological Materials, Fundamentals of Biological Engineering, Advances in Biological Engineering, and Introductory Design for Biological and Agricultural Engineers

**Short Description of Research Interests**
- Separation of high-value protein products from transgenic plants and other biological sources (design efficient and economical extraction and separation methods for the purification of recombinant proteins)
- Processing for value-added co-products from biofuel production (develop new processing strategies that will reduce biofuel cost by creating higher value co-products utilizing non-fermentable biomass fractions)

**Three Recent Publications**

**Recent Research/Outreach/Extension Projects**
**Research:**
- Integrated process development for protein and oil recovery from microalgae biomass
- Extraction and purification of a recombinant protein from rice

**Outreach:**
- E3 Biosystems Engineering Workshop: Sustaining our world as biological engineers: Explorations in Aquaponics

**Hardware/Equipment Capabilities within Your Research Activities**
- Grinding/Homogenization (Silverson high-shear, Waring blender, sonicator)
- Microtiter plate reader (UV/VIS detection for endpoint, kinetic, and spectral scans)
- Protein analysis methods (SDS-PAGE, Western blot, activity assays)
- Fractionation and protein purification equipment (membrane filtration, chromatography)

**Software/Simulation Capabilities within Your Research Activities**
- SuperPro Designer (Intelligen) Process Simulation
Bill Xiaofeng Zhang

**Department:** Architectural Engineering and Construction Science  
**Email:** billz@k-state.edu  
**Website:** http://www.are-cns.ksu.edu/people/faculty/billzhang  
**Phone:** (785) 532-3583

**Education**

<table>
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<tr>
<th>Degree</th>
<th>Year</th>
<th>Field</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Ph.D.</td>
<td>2004</td>
<td>Civil Engineering</td>
<td>Lehigh University, Bethlehem, PA</td>
</tr>
<tr>
<td>D.Eng.</td>
<td>1998</td>
<td>Structural Engineering</td>
<td>Southeast University, Nanjing, China</td>
</tr>
<tr>
<td>M.Eng.</td>
<td>1994</td>
<td>Structural Engineering</td>
<td>Southeast University, Nanjing, China</td>
</tr>
<tr>
<td>B.Eng.</td>
<td>1991</td>
<td>Industry &amp; Civil Building Engineering</td>
<td>Southeast University, Nanjing China</td>
</tr>
</tbody>
</table>

**Academic/Industrial Experience**

- Assistant professor, Dept. of Architectural Engineering & Construction Science, Kansas State University, 2011-present
- Assistant professor, Dept. of Civil & Environmental Engineering, Temple University, 2010 - 2011
- Project structural engineer, KlingStubbins, Philadelphia, 2006 - 2010
- Senior structural engineer, Skidmore, Owings & Merrill (SOM), San Francisco, 2005 - 2006

**Key Words Related to Your Activities**

Licensed PE and SE in multiple states, LEED accredited professional. Teach undergraduate and graduate courses in structural engineering, in particular in structural design, steel structures, structural dynamics, and earthquake engineering. Research in earthquake engineering, steel structures, dynamic and vibration control. Manuscript reviewer for a few top journals in structural engineering and earthquake engineering, e.g., *Journal of Structural Engineering, Earthquake Spectra*, etc.

**Short Description of Educational Interests**

- Develop and teach fundamental and advanced courses in structural engineering.
- Advise undergraduate and graduate students on their projects and research.
- Advise student groups related to structural engineering and architectural engineering.

**Short Description of Research Interests**

- Innovative and resilient structural systems and components against multi-hazards.

**Three Recent Publications**


**Hardware/Equipment Capabilities within Your Research Activities**

None. If possible, I would like to acquire field vibration test equipment and data acquisition systems, in order to conduct vibration control research.

**Software/Simulation Capabilities within Your Research Activities**

- ABAQUS, finite element simulations (including dynamic analysis)
- OpenSees, open source finite element dynamic simulation (academic platform)
- Commercial structural analysis packages, e.g., SAP2000, ETABS, RAM, RISA-3D, etc.