Health Research Initiative:

UA Faculty Research Interests

March 17, 2014
Brendon McDermott, PhD, ATC
Department of Health, Human Performance and Recreation

- **Background**
  - Certified Athletic Trainer since 2000
  - PhD in Kinesiology from the University of Connecticut

- **Research**
  - Hydration and dehydration related to physical activity and thermoregulation
  - Hydration education and its effect on hydration practices
  - Human thermoregulation impairments and interventions
  - Prevention and treatment of exertional heat illness (heat cramps to heat stroke)
  - Preventing sudden death in sport (sudden cardiac and exertional sickling)
  - Athletic performance and thermoregulation

- **Funded work**
  - Effect of various preventive devices on core temperature rise during activity
  - Comparison of rehydration methods following exercise dehydration
  - Rehydration beverage comparisons on recovery and exercise performance
Craig Thompson, PhD
Computer Science and Computer Engineering Dept – cwt@uark.edu – 479.799.0214

• Background
  – PhD in computer science, UT Austin, 1984
  – IEEE Fellow for contributions to artificial intelligence, database, and middleware

• Research
  – Pervasive computing
  – 3D virtual worlds

• Projects
  – Everything is Alive Project - http://vw.ddns.uark.edu
  – Modeling Healthcare in a Virtual World
  – Searching virtual worlds
  – Modeling Activities for Daily Living
  – System architectures, monitoring and apps for obesity, trauma, ...

Sensors, workflows, ontologies, data management, system architectures
Gary D. Ferrier, PhD
Department of Economics—gferrier@uark.edu—479.575.6223

• Background
  – PhD in economics
    (University of North Carolina, 1988)

• Research—GENERAL
  – Efficiency and Productivity Analysis
  – Data Envelopment Analysis (DEA)
  – Stochastic Frontier Analysis (SFA)
  – Malmquist Productivity Index
  – Measuring Capacity Utilization
  – Applied Microeconomics

• Research—MORE SPECIFIC
  – Cost, Technical, and Scale Efficiency of US Hospitals
  – Effects of Electronic Health Records on Hospital Efficiency
  – Effects of Ownership Form, Regulation, Teaching Status on Hospital Efficiency
  – Congestion in the Production of Hospital Services
  – Incorporating Quality into the Measure of Hospital Efficiency

Cost, Technical, Allocative, and Scale Efficiency; Productivity; DEA; SFA
Dr. Gisela Erf, Ph.D.,
Tyson Professor in Avian Immunology

**Background**

- PhD in Immunology (Cornell University, 1988)

**Research**

- The interrelationship between genetic susceptibility, immune system activities and environmental factors in the development of complex, non-communicable diseases

**Models:**
- Autoimmune vitiligo in the Smyth line chickens;
- Pulmonary arterial hypertension in broiler chickens;
- Arkansas Rous sarcoma Regressor (R) and Progressor (P) lines of chickens

- Basic aspects of innate and cell-mediated immunity; assess and monitor tissue/cellular responses in vivo using feather pulp (dermis) injections

**Funded work**

- Gene-expression during autoimmune vitiligo development
- Environmental triggers of autoimmune vitiligo expression
- Role of the immune system in PAH of broilers
- Monitoring anti-Rous sarcoma immune activity in R&P lines
- In vivo assessment & monitoring of nanoparticle activities
L. Jean Henry PhD
Department of Health, Human Performance, & Recreation
ljhenry@uark.edu – 479.575.2899

• Background
  – PhD in Health Studies (Worksite Health) (Texas Woman’s University)
  – Health Promotion/Health Educator
    • Corporate/Worksite health
    • Non-profit administration
    • Corporate team-building training
    • University athletics

• Research
  – Aging Issues
    • Body image in women
    • Issues in sexuality and aging
    • Injury prevention
  – Culture and Health

• Collaborative Research
  – Motivations to exercise/physical activity in middle-age
  – Certified Nursing Assistants in long term care
  – Workplace spirituality as a construct of health promotion

• Professional Development Interests
  – International study / Study Abroad
  – Culture/health influences through the lifespan
Kartik Balachandran, Assistant Professor

**Education:**

- B.Eng. Mechanical Engineering, National University of Singapore
- M.S. Mechanical Engineering, Georgia Institute of Technology
- Ph.D. Biomedical Engineering, Georgia Institute of Technology
- Postdoc in Tissue Engineering and Mechatransduction, Harvard University and the Wyss Institute for Biologically Inspired Engineering

**Research Interests:**

- Development and evaluation of organ/disease on chip systems for toxicology and safety pharmacology testing

- Development of polymer/protein composite scaffolds for cardiovascular tissue engineering and regenerative medicine

- Role of mechanical forces in developmental and adult cardiovascular pathology
Kristen N. Jozkowski PhD
Community Health Promotion
kjozkows@uark.edu–479.575.4111

• Background
  • PhD: Health Behavior (Indiana University)
  • Minors: Mixed Methods & Human Sexuality
  • Sexuality Researcher/ Behavioral Scientist
    • Sexual consent and sexual assault prevention
    • Sexual function
    • Women’s health
    • Health seeking and preventative health behavior change

• Research Goals
  • Improving sexual assault prevention education
  • Promoting sex-positive behaviors

• Funded Work
  • Re-conceptualizing women’s sexual function: A mixed-methods exploration of women’s sexual functioning and the factors that influence sexual health
  • Beyond the Dyad: When does consent to sex begin?

• Collaborative Research
  • Preventative health: HPV vaccine
  • Sexual risk taking in conjunction with alcohol and drug use
  • Consent & Oral Sex/Consent & WSW
Luke R. Howard  
Professor, Department of Food Science – lukeh@uark.edu – 479.575.2978

- **Background**
  - PhD in Food Science (Univ. of Arkansas, 1989)
  - Food Chemist

- **Research**
  - Identification and characterization of bioactive compounds in horticultural crops
  - Effects of food processing on polyphenolics
  - Recovery of polyphenolics from processing waste streams
  - Anti-obesity effects of fresh and processed berries

- **Funded work**
  - Characterization of polymeric pigments in processed berries
  - Isolation and purification of tocotrienols from rice bran deodorizer distillate
  - Novel methods to retain berry polyphenolics during processing and storage

Berries, Polyphenolics, Processing, Natural Products Chemistry
Matthew S. Ganio, Ph.D.
Dept. of Health, Human Performance and Recreation
msganio@uark.edu – 479.575.2956

- **Background**
  - Undergraduate - University of Georgia
  - Masters - University of Georgia
  - Ph.D. - University of Connecticut
  - Post-Doc - Univ of Texas Southwestern Medical Center

- **Research**
  - Effects of passive and exercise heat-stress on the human:
    - Cardiovascular Physiology
    - Thermoregulatory Physiology
    - Hydration
  - Identifying impaired physiology in clinical populations (obese, diabetic) and possible links to exercise adherence

- **Funded work**
  - Effect of heat stress on arterial compliance in smokers versus non-smokers.
  - Green exercise as a modality to enhance talk therapy.
  - Hydration biomarkers: the validation of urine color in kids.
Nancy G. Miller

• **Background:**
  – PhD : Interior Design : University of Minnesota : 1998

• **Research:**
  – Human Factors in Design
  – Sub-specialty :
  – Role of privacy in assisted living environments
  – Arkansas Health and Housing survey
  – Effects of the Built Environment for Alzheimer’s patients
Min Zou, Associate Professor
Ph.D. in Mechanical Engineering (Georgia Tech 1999)

Research Interest

• Nano-surface-engineering
  - for biomedical, surface wetting, and tribological applications

• Nanomechanics
  - Nanomechanical characterization of nanostructures, thin films, nanocomposites, and biomaterials

• Nanotribology
  - Nanotribology of nano-engineered surfaces

Application Areas

• Dental implants and biomedical devices
• Antimicrobial surfaces
• Biomaterials, coatings
• Self-cleaning, anti-fogging, anti-icing, and anti-corrosion surfaces
• Micro-electro-mechanical systems (MEMS)
• Durable low friction surfaces
• Polysilicon large grains, Si nanowires and nanostructured surfaces for solar cell applications

Nano Mechanics and Tribology Laboratory (NMTL)
Background: PhD – Agricultural Economics, Texas A&M University

- Professor and Tyson Endowed Chair, University of Arkansas, 2009-present.
- Professor, Texas A&M University, 2003-2008.
- Associate Professor, Texas A&M University, 1999-2003.
- Assistant Professor, Texas A&M University, 1997-99.
- Assistant Professor, Rutgers University, 1993-97.
- Lecturer of Applied Economics, Massey University, 1992-93.

Research Topics:

- Effect of food, built, and social environments on childhood obesity
- Factors affecting nutritional label use
- Estimation of people’s valuation for novel products/product attributes using non-hypothetical preference elicitation methods
- Impact evaluation/analysis of food, nutrition, and health programs and policies

Recent Funded Projects

The Servoss group focuses on using biomimetic materials with a poly-N-substituted glycine (peptoid) backbone for biomedical applications. Peptoids are easy and inexpensive to synthesize, and can be designed to form extremely stable secondary structures similar to proteins (Figure 1). In addition, peptoids are protease resistant decreasing the potential of an immune response.

We have used peptoids to create microspheres on surfaces (Figure 2). These 3D peptoid coatings can be used to increase sensitivity and dynamic range in biosensors.

We are also working on the rational design of peptoids that bind to β-amyloid (Alzheimer’s disease) and AL-amyloid (multiple myeloma). We have shown that peptoids are able to prevent the aggregation of β-amyloid (Figure 3).

Other projects in our lab include: peptoid-based antibody mimics for ELISA microarray (Figure 4), antimicrobial agents, membranes for chiral separations, and targeted drug-delivery systems.
Stavros Kavouras, PhD, FACSM
Department of Health, Human Performance and Recreation, HPER 308T
Human Performance Laboratory – kavouras@uark.edu (479) 575-5309

• Background
  – Postdoc in Physiology (Yale 199)
  – PhD in Exercise Physiology (U Connecticut 1997)
  – Human Exercise Physiologist

• Research
  – Hydration, Thermoregulation and Exercise Performance
  – Hydration Assessment Techniques
  – Mild Hypohydration and Health
  – Physical Activity and Cardiovascular Diseases

• Funded work
  – Validation of Hydration assessment methods in kids
  – Hydration intervention program in kids
  – Electrolyte intake during exercise
  – Hyponatremia in ultra-endurance athletes

Human hydration assessment, Thermoregulation, Exercise performance
Sun-Ok Lee PhD
Department of Food Science – sunok@uark.edu – 479.575.6921

- **Background**
  - PhD in Nutrition, minor in Toxicology (Iowa State University)

- **Research**
  - Role of functional foods and plant bioactive components in the prevention of chronic diseases
  - Bioavailability and bioefficacy of bioactive components in humans
  - Gut microbial metabolism of dietary phytochemicals
  - Food toxicology

- **Funded work**
  - Anti-diabetes Efficacy of a Novel Rice Product in Humans
  - Efficacy of Fresh and Processed Blackberries in alleviating the Complications Associated with Obesity
  - Production and Evaluation of Novel Prebiotic Fibers from Soy on the Digestive Microbiota
  - Effects of a Sorghum Starch on Blood Glucose and Insulin Responses in People with Pre-diabetes
Timothy J. Muldoon, Assistant Professor
tmuldoon@uark.edu / (479) 575-5324 / Bell 4196-A

Education:
B.S. Biomedical Engineering, Johns Hopkins University, Baltimore, MD
Ph.D. Bioengineering, Rice University, Houston, TX
M.D. Baylor College of Medicine, Houston, TX
Postdoc in biomedical imaging, Columbia University, New York, NY

Research Interests:
• High-resolution microendoscopy for in vivo diagnosis of occult dysplasia in epithelial tissues during clinical endoscopy and intraoperative tumor margin assessment

• Molecule-specific optical probes targeting structural and functional proteins abnormally expressed in cancer

• High-speed spectroscopic imaging for visualization of tissue perfusion and disruption of blood flow autoregulation during ischemia / reperfusion syndrome
Shengfan Zhang, Ph.D.
Department of Industrial Engineering, shengfan@uark.edu, 479-575-3571

• Background
  – PhD in Industrial Engineering, minor in statistics
    North Carolina State University, 2011
  – Assistant Professor, Department of Industrial Engineering
    University of Arkansas, 2011 – present

• Research
  – Interests and Focus
    • Mathematical modeling of stochastic systems
    • Decision analysis under conditions of uncertainty
    • Statistical modeling and data mining for complex systems
  – Application Areas
    • Medical decision making related to the detection, treatment and prevention of chronic
diseases (breast cancer, etc.)
    • Health care delivery
    • Health disparities, aging, etc.

• Current Projects
  – Personalize biopsy decisions for breast cancer patients with various health background
  – Analyzing the effect of breast cancer screening adherence on patient outcomes

Medical Decision Making, Disparity Studies, Health Services Research, Public Policy
Yanbin Li, Ph.D., P.E.
Department of Biological & Agricultural Engineering – yanbinli@uark.edu – 479.575.2881

• Background
  – PhD in agricultural engineering
    (Penn State 1989)
  – Biological engineer
    • Instrumentation engineer
    • Agricultural & food processing engineer
    • Work on solving problems associated with food safety and animal diseases

• Research
  – Biosensors for rapid detection of biological & chemical agents
  – Predictive models for foodborne pathogens
  – Quantitative risk assessment of microbial hazards in foods
  – Intervention technologies in food processing

• Funded work
  – Impedance biosensor for detection of avian influenza virus
  – Cell-based immunosensor for detection of *E. coli* O157:H7
  – SPR aptasensor for detection of avian influenza virus
  – QD fluorescent biosensor for simultaneous detection of multibacterial pathogens in foods
  – Quantitative risk assessment model for pathogens in seafoods

Biodetection, Predictive Models, Risk Assessment, Food Safety Engineering
Anna Jarrett, PhD, ACNS/ACNP, BC
Assistant Professor
Eleanor Mann School of Nursing
ajarrett@uark.edu
479-575-3581

Background
- PhD in Nursing, University of Missouri-Columbia
- MNSc, University of Missouri-Columbia, Critical Care Ed.
- Post Graduate Certificate, Acute Care Nurse Practitioner
- Adult Clinical Nurse Specialist, trauma specialty

Research interests
- Using technology to improving outcomes in trauma care
- Pain management modalities in acute and chronic pain
- Trauma system standardization

Collaborative Research
- IPhone app development for Rib Score and Protocol
- Remote, real time apps of patients at the scene of trauma
- Pain management in acute care facilities, WRMC
David A. Zaharoff, Ph.D.
Assistant Professor

**Research Focus**
- Immunobioengineering
- Biomaterials
- Tumor Immunology
- Drug Delivery
- Cytokine biology
- Metastasis

**Application Areas**
- Therapeutic cancer vaccines and immunotherapies
- Particle-based antigen delivery systems
- Biomaterials-based platforms for controlled release of proteins and antigens
- Vaccines to combat illicit drug addiction

**Laboratory for Vaccine and Immunotherapy Delivery**

- Intravesical immunotherapy eliminates bladder tumors
- Non-invasive imaging of cytokine depots

**Healthy**
- Chitosan/IL-12
- IL-12 alone
- Untreated

Breast cancer immunotherapy neoadjuvant to resection prevents lung metastasis
Jacquelyn D. Wiersma, Ph.D.
Human Development & Family Sciences
jwiersma@uark.edu; 479-575-4688

Education

• 2008-2010 Post-doc, The Prevention & Methodology Centers
  *The Pennsylvania State University, University Park, PA*
• 2008 Ph.D. Human Development & Family Studies
  *Texas Tech University, Lubbock, TX*
• 2006 M.S. Family Studies & Human Development
  *Arizona State University, Tempe, AZ*
• 2003 B.A. Psychology
  *University of Northern Iowa, Cedar Falls, IA*

Research Emphasis

I am primarily interested in how alcohol affects adolescent and young adult romantic relationships. I have focused on the congruency versus discrepancy in drinking patterns and how this affects couples’ satisfaction, commitment, alcohol-related problems, alcohol abuse, and intimate partner violence (IPV) in dating, cohabiting, and married romantic relationships. I am also interested in the various avenues in which romantic relationships, alcohol use, and IPV are related in adolescents and young adults through the processes of selection and socialization. Other interests include sexual assault violence prevention through the use of bystander interventions.
Kameri Christy, MSW, PhD  
School of Social Work - kameric@uark.edu - 479.575.4655

• Background  
  - PhD in Social Welfare  
    (U. Kansas 2003)  
  - MSW, Clinical Concentration  
    (U. Kansas 1986)

• Research  
  - Economic Development and Security for Abused Women  
  - Decreasing Violence Against Women  
  - Best Practices in Working with Abused Women  
  - Anti-Poverty Policies and Programs (specifically Individual Development Accounts)

• Funded work  
  - Ford Foundation, 2006-2012 “Comparative Study of Outcomes for IDA Participants in Arkansas and New Mexico.” PI.  
  - Indiana Housing and Community Development Authority, 2009-2015 “Evaluation of the Educational Development Account (EDA) Pilot Program” PI.  
  - Department of Health and Human Services, 2007 “Voices for Healthy Choices.” Consultant.
Ana Bridges, PhD
Department of Psychological Science
abridges@uark.edu – 479.575.5818

• **Background**
  – PhD in clinical psychology (U. Rhode Island 2007)
    - Dissertation topic: Pornography use, relationship, and sexual satisfaction in romantic couples
  – Focus on methodology
    - Multivariate statistics, program evaluation

• **Research**
  – Romantic relationships, sexuality, violence and victimization
  – Integrated behavioral health, provision of mental health services in primary care settings

• **Funded work**
  – Training integrated behavioral health care psychologists in medically underserved communities
  – Crossing the date line: A violence prevention program for teenage girls
  – Hispanic community members’ expectations of mental health provision and service utilization

Primary care psychology; minority mental health; sexuality and sexual assault
Lepaine Sharp-McHenry, R.N., M.S.

Clinical Instructor, Assistant Director
Eleanor Mann School of Nursing

• **Background**
  
  M.S.N., University of Oklahoma-Tulsa, 1996
  Specialty: Psychiatric Mental Health Nursing

• **Research Interest**
  
  Economic Impact of Nursing Shortage
  Development of Electronic Student Nursing Recordkeeping System
  Acuity Based Staffing in Long Term Care

• **Funded Projects**
  
  Chemical Dependency Among Nurses in Long Term Care
  Long Term Care Quality Improvement
Wei Shi, Ph.D.
Department of Chemistry & Biochemistry
CHEM 212, weishi@uark.edu, 479.575.2294

• Background
  - Ph.D. in Organic/Medicinal Chemistry
    (University of Alberta, Canada, 2008)
  - Postdoc in Medicinal Chemistry/Chemical Biology
    (Johns Hopkins University, School of Medicine, 2008–2012)

• Research Interests (Using small molecules to study functions of bio-macromolecules)
  - Identify the cellular targets of antitumor glycoconjugates for cancer therapeutics
  - Develop green chemistry with a focus on bioorthogonal reactions for target identification
  - Develop molecular hybrids targeting both DNA and chromatin to study the functions of chromatin proteins

Schematic Representation of Central Methodology (ABPP: Activity-Based Protein Profiling)
Andrew Proctor  Ph.D.
Department of Food Science  aproctor@uark.edu  479 575 2980

•  Background
  –  PhD in Food Science  
    (U. of Arkansas 1986)
  –  Lipid Chemist
    •  Oil processing
    •  Lipid analysis
    •  Solving food lipids research problems , including the development of lipid-based functional foods

•  Research
  –  Lipid Chemistry & Health Research
  –  Developing novel vegetable oil processing methods to enhance oil nutritional health value
  –  Chemical, nutritional and food quality characterization of novel functional food oils

•  Funded work
  –  Production of conjugated linoleic acid (CLA)-rich vegetable oils
  –  Chemical characterization of CLA-rich oils
  –  Food and nutritional quality of CLA rich oils
  –  Use of CLA-rich oil as feed to incorporate CLA into eggs, poultry and catfish foods
Background
- PhD in Chemical Physics (Columbia University, 1970)
- NIH Postdoctoral student, California Institute of Technology (1970-1972)
- Member, NIH Macromolecular Structure and Function A Study Section (2010-2012)
- Chair, NIH Macromolecular Structure and Function A Study Section (2010-2012)

Funded Research
- Biological Electron Transfer Reactions
- Development and Use of Photoactive Ruthenium Complexes to Initiate Electron Transfer
- The function of cytochrome bc1 and cytochrome oxidase in mitochondrial energy production
Michelle Gray, Ph.D.
Assistant Professor – Exercise Science
Co-Director – Office for Studies on Aging
rgray@uark.edu; 575-2975

• Background
  – Ph.D. – Exercise Science (University of Arkansas)
  – M.S. – Adult Fitness / Cardiopulmonary Rehabilitation (Ball State University)
  – B.S. – Cardiopulmonary Rehabilitation (University of TN – Chattanooga)

• Current Projects
  – Functional fitness assessment of adults over 65 years
  – Validation of a functional power meter for adults over 65 years
  – Effects of peripheral arterial disease on functional parameters of adults

• Collaborative Research
  – Effects of high- and low-velocity resistance training on measures of cognition, body composition, and functional fitness of adults over 75 years

• Funded work
  – Osteoporosis education program for women at UA
  – The Effects of Consuming an Egg-Based Breakfast on Energy Metabolism, Food Intake, and Glycemic Response in School-Aged Children
Robert B Leflar  
Ben J. Altheimer Professor of Legal Advocacy – rbleflar@uark.edu – 479.575.2709
Professor, UAMS Colleges of Medicine (adjunct) and Public Health
Visiting Scholar (2012-2013), Tokyo U. Faculty of Law; Keio U. Faculty of Medicine

• Background
  – J.D., M.P.H. (Harvard); president, Harvard Journal on Legislation
  – Attorney, Public Citizen’s Health Research Group (consumer advocacy on medical product safety & Freedom of Information Act litigation)
  – Research grants (Japan): Fulbright scholar, Japan Foundation Fellow, Japan Society for the Promotion of Science scholar, Abé Fellow

• Research and Teaching
  – Comparative health law, usually with a Japan focus
  – U.S. health policy, health law, bioethics and law
  – Torts, products liability, other personal injury law, advanced torts

• Representative Publications
  – Human Flotsam, Legal Fallout: Japan’s Tsunami and Nuclear Meltdown (2012)
  – The Law of Medical Misadventure in Japan (2012)
  – Public Accountability and Medical Device Regulation (1989)

• Public Service
  – Arkansas Sierra Club, Chapter Chair, Political Chair, State Government Chair
  – Drafter, revisions to Ark. Rights of the Terminally Ill & Permanently Unconscious Act
  – Commentator, health care reform law & related issues
Manuel D. Rossetti, PhD, P.E.

Interested in reducing cost of health care services and improving service to patients

- Studied the use of mobile robots for within hospital deliveries
- Capability modeling for applying supply chain best practices to health care value chain
- Applied inventory modeling to reduce material costs within hospitals

University of Arkansas

Analyzed emergency room staffing and scheduling and patient flow via simulation
Christina I. Serrano, Ph.D.
Department of Information Systems
cserrano@walton.uark.edu – 479.575.5929

➤ **Background:**
- Ph.D., Management Information Systems
- B.B.A., Management Information Systems
- B.H.S., Public Health

➤ **Research Interests:**
- Application of information technologies and systems to improve population health, particularly in underserved populations
- Success factors in telemedicine consultations
- Clinician and patient acceptance of health information technologies

➤ **Funded Work:**
Research endeavors have been funded by the Centers for Disease Control & Prevention and the Georgia Department of Community Health’s State Office of Rural Health.
Background

Ph.D. Human Development and Family Studies
University of Missouri

Research Interests

Aging Families
Family Structure, Diversity, and Intergenerational Transfers
Health-Related Quality of Life
Rural Aging
Secondary Data Analyses

Recent Projects

Diabetes Intrusiveness and Well-Being Among Elders
Latent Class Analyses of Emotional Support Sources in Late Life
Masculinity and Well-Being in Long-Term Care
Rurality and Quality of Life in Long-Term Care

Rurality, Families and Aging, Health-Related Quality of Life
Ralph Henry: Research Activities & Interests

Proteins
- Design
- Production
- Purification

Protein-based Medicines

Protein Routing

Bio-Nano Materials

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Background

Ph.D. in Genetics, Kansas State University 1986
Professor of Biological Sciences
Director of Cell and Molecular Biology Graduate Program
Affiliated Faculty Center of Excellence for Poultry Science

Research

- Genomics and Bioinformatics in Vertebrates
- Evolution of genomes
- Genetics of metabolic diseases in chickens
  + PAH- Pulmonary Arteriole Hypertension
  + BCO- Bacterial Chondronecrosis & Osteomyelitis
- Genetics of testicular development and sperm mobility in chickens

Funded work

- Assembly of the Timber Rattlesnake genome
- Genetics of sperm mobility
- Identification of genetic markers for PAH in chickens
- Identification of bacterial species associated with BCO
Nano/Bio Photonics Lab
D. Keith Roper – Chem Eng/MicroEP

Nanocomposites to enhance electromagnetism in health and informatics.

Health
- Cancer diagnostics, imaging
- Vaccine/therapeutic delivery
- Proteomic/genomic analysis
- Optothermal materials

Informatics
- Materials informatics
- UV-vis/NIR sensors, detectors
- Optical interconnects/couplers
- ITRS 22nm node CMOS

MultiScale Approach
- Model
- Fabricate
- Evaluate
- Device

Recent Developments
- U.S. Patent: DNA amplification
- Book chapter: Chem/bio sensors
- NSF Working Group: Optics, photonics
- Program Director: Synthetic Biology
  Neural Engineering

Graduate/Undergrad Education

Interdisciplinary Activities
Background

‣ Ph.D. SUNY-Albany, 1985
‣ 1985-2005 University of Alabama-Birmingham
‣ 2005-Present University of Arkansas

Research Interests

‣ Mental & Physical Health Among Special Populations (Homeless; At-Risk Youth; Low-Income Minorities)
‣ Obesity Risks Among School-Age Youth
‣ Health, Nutrition and Food Security Among K-12 Students
‣ Community Health Indicators; Place-Based Health Initiatives

Recent Work

‣ Fitzpatrick, Kevin M., Don Willis, and Gail O’Connor. 2014. “Circumstances, Resources and Weight Status Outcomes Among Middle School Students.” *Journal of Early Adolescence*


Pankaj Setia, PhD,
Assistant Professor, Information Systems Department
psetia.uark@gmail.com; psetia@uark.edu; Ph: 479-575-5653

• Background
  • Ph.D., Michigan State University, *Information Technology and Management*
  • PGPM, Management Development Institute (MDI), India, *Information Management*
  • B.S., University of Delhi, India, *Physics*

• Research Interests
  – Computational (simulation) models to leverage information technologies (ITs)
  – Effects of electronic health records (EHR) capabilities on treatment quality and costs
  – Managing organizational change to harness IT architectures in hospitals
  – Information exchange and participation in health information exchange (HIE) networks
  – Hospital work culture and IT use

**Key words**: Simulation, HIE Networks, EHR, Treatment Quality and Costs, IT Architecture, Change Management
Robert E. McGehee, Jr., PhD
UAMS-Professor Pediatrics; Dean Graduate School – rem@uams.edu; 501-603-1998

• **Background**
  – PhD in Physiology and Biophysics (UAMS, 1990)
  – Postdoc; Molecular Endocrinology (Harvard Medical School)
    • Type 2 Diabetes / Obesity/ Stem Cells

  • Executive Director Arkansas Biosciences Institute (ABI)
  • Chair COM Research Council

• **NIH Funded Research**
  – Stem cell biology
  – Cellular differentiation
  – Molecular mechanisms of obesity and type 2 diabetes

• **Role for ABI and UAMS Grad School in fostering UAF Collaborations**
  – Administrative support for collaborative meetings (travel, meals, etc.)
  – Liaison to UAMS research faculty, programs
  – Contact for facilitating UAMS collaborations
J. Mick Tilford, PhD
Professor of Health Policy and Management
University of Arkansas for Medical Sciences
TilfordJohnM@uams.edu; 501-526-6642

• **Background and Experience**
  – PhD in Health Economics (Wayne State, 1993)
  – Secondary Appointments in Pediatrics and Pharmacy
  – Senior Analyst Arkansas Foundation for Medical Care
  – Director, PhD Program in Health Systems Research
  – Co-Director Comparative Effectiveness Component (TRI)

• **Funded Research as PI**
  – Quality of Life in Autism – NIMH
  – Traumatic Brain Injuries – MCHB
  – Pediatric ICU Systems – AHRQ
  – Childhood Chronic Conditions – CDC

• **Collaborative Vision**
  – Systems Approach to Health Care Delivery
  – Valuing Health Care Technology
  – Comparative Effectiveness using Information Technology
Jerry Ware, PhD
Physiology & Biophysics – jware@uams.edu – 501-526-6096

- **Background**
  - Post-doctoral fellowship – UNC, Chapel Hill, NC
  - The Scripps Research Institute – La Jolla, CA (1987-2004)
  - Professor, UAMS (2004-present)

- **Research Interests**
  - Hemostasis/Thrombosis
  - The pathophysiology of blood platelets in cancer and inflammation

- **Selected Recent Publications**
  - Kanaji, T., Ware, J., Okamura, T., and Newman, P. 2012 GPIbα regulates platelet size by controlling the subcellular localization of filamin. *Blood* 119:2906-2913. (Selected by Faculty of 1000 as top 2% of published articles in biology and medicine) See commentary in same issue, page 2702.
Marie-Rachelle Narcisse, PHD, CHCQM, FABQAURP

Senior Research Associate - Biostatistician
Office for Nursing Research, narcisse@uark.edu, 479-575-4482

Education:

BSc: Economics, University of Montreal
MSc: Economics, specialization: Economic Evaluation of Programs, University of Montreal
MSc: Economics, specialization: International Economics and Finance, University of Montreal
PhD: Public Health, specialization: HealthCare Management
Graduate Certificate: Principle and Practice of Clinical Research, Harvard School of Medicine

Research Interests:

• Health Behaviors
• Behavioral Economics
• Health Disparities
• Health Economic Evaluation
• Health outcomes research
• Comparative Effectiveness Research
Peter O. Kohler, M.D., Vice Chancellor, UAMS Northwest

Education:

B.A., University of Virginia, Charlottesville, VA  
M.D., Duke University Medical School, Durham, NC  
Fellow in Endocrinology, Duke University Medical School, Durham, NC  
Senior Investigator, Endocrinology Branch, National Cancer Institute, Bethesda, MD

Research Interests:

• Enhancing patient care utilizing teams of various health professionals  
• Improving medical care of high-risk populations  
• Assessing and utilizing technological systems to improve patient care  
• Increasing opportunities for inter-professional education of students in the health professions  
• Exploring the prevalence of diabetes in minority populations in NW Arkansas

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