



THE UNIVERSITY of TENNESSEE **UT**
CHATTANOOGA

RESEARCH DAY 2014

MARCH 21, 2014

9:00 AM - 3:30 PM

UNIVERSITY CENTER
TENNESSEE, CHATTANOOGA, AND
UC FOUNDATION ROOMS

UTC RESEARCH DAY 2014

SCHEDULE OF EVENTS

9:00 am - 3:00 pm

POSTER PRESENTATIONS ON DISPLAY

Listed on pages 5-24

Tennessee Room and Chattanooga Rooms A, B

9:00 am

MORNING SYMPOSIUM

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UC Foundation Room

9:15 am - 3:30 pm

PLATFORM PRESENTATIONS

Listed on pages 25-28

Chattanooga Room C

11:00 am

REMARKS

Tennessee Room

11:30 am

REFRESHMENTS SERVED

Tennessee and Chattanooga Rooms A, B

1:00 pm

AFTERNOON SYMPOSIUM

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UC Foundation Room

4:00 pm

DEPARTMENTAL HONORS PRESENTATIONS

Chattanooga Room C

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UTC RESEARCH DAY 2014

POSTER PRESENTATIONS

University Center • Tennessee and Chattanooga Rooms

COLLEGE OF ARTS AND SCIENCES

Art

EXPERIMENTAL TYPOGRAPHY AND THE ZINE

Aggie Toppins

Biological and Environmental Sciences

A COMPARISON OF ALGAL AND CORAL SPECIES DIVERSITY AND FISH SPECIES RICHNESS OF NATURAL AND ARTIFICIAL PATCH REEFS IN NORTHERN SAN SALVADOR, BAHAMAS

Jalana Abernathy • Dawn Ford, Ph.D. • Ann Holmes, Ph.D. • Chloe Donley
• Carlos Salinas • Ryan Welborn

THE EFFECTS OF E-CIGARETTE SOLUTIONS ON CELL GROWTH

Christopher Beavers • Ethan A. Carver, Ph.D.

SPATIOTEMPORAL PATTERNS IN THE DISTRIBUTION AND ABUNDANCE OF THE INTRODUCED REDBREAST SUNFISH (*LEPOMIS AURITUS*) AND NATIVE LONGEAR SUNFISH (*L. MEGALOTIS*) IN RESERVOIRS OF THE TENNESSEE RIVER DRAINAGE

Lacey M. Genard • Mark S. Schorr, Ph.D. • Jose Barbosa, Ph.D. • Andy Carroll • Sean Richards, Ph.D. • Charley Saylor

EXOGENOUS FATTY ACID UTILIZATION IN *PSEUDOMONAS AERUGINOSA*: IMPLICATIONS FOR VIRULENCE

Michael S. Glennon • William C. Bible • David K. Giles, Ph.D.

**EFFECTS OF INTRUSION ON BODY CONDITION OF NEOTROPICAL
MIGRANT PASSERINES**

Laura Marsh • David Aborn, Ph.D.

**POPULATION GENETICS OF INTRODUCED PREDATORY LADY BEETLES:
THE EFFECTS OF BACTERIAL SYMBIONTS AND MICROSPORIDIA**

Eric O'Neill, Ph.D. • Josh Evers • Yukie Kajita, Ph.D. • Evan McKenzie

THE CONFORMITY EFFECT

Izabelle Peters • Rosebelle Peters, RN, MSN

**SAMPLING AMPHIBIANS AND REPTILES IN SOUTHEASTERN TENNESSEE:
LESSONS LEARNED AND IMPLICATIONS FOR CONSERVATION AND
MANAGEMENT**

George Szarka • Thomas Wilson, Ph.D.

Chemistry

**DOUBLE WALLED CARBON NANOTUBE AND GRAPHENE BILAYER
MODELS FOR A GENERAL REPRESENTATION OF CARBON
NANOPOROSITY AND MOLECULE-SURFACE BINDING ENERGIES**

Hyun Cho • Thomas Rybolt, Ph.D. • C. Ronnie Funk • Matthew J. Rice
• Jae H. Son • Howard E. Thomas, Ph.D.

**STEROIDS AND LIPOPROTEINS: INNOVATIVE ANALYTICAL METHODS
OF QUANTIFICATION**

Ashley Galloway • Manuel F. Santiago, Ph.D. • Carrie C. LeMay • I. Nicky
Ozbek, Ph.D. • Stefanie R. Whitson, Ph.D.

**STUDIES OF DNA BINDING INTERACTIONS WITH $[Rh(9S3)Cl_3]$,
 $[Rh(9S2O)Cl_3]$, AND $[Ir(9S3)Cl_3]$ USING FLUORESCENCE
SPECTROSCOPY**

Hendrik J. Greve • Jisook Kim, Ph.D.

**SYNTHESIS, CHARACTERIZATION, AND REACTIVITY OF P-CYMENE
RUTHENIUM(II) COMPLEXES WITH FLUORINE-CONTAINING
PHOSPHITE LIGANDS**

Michael Hankins • John P. Lee, Ph.D.

**EQUILIBRIUM BINDING OF THE UREMIC TOXIN P-CRESOL TO SERUM
ALBUMIN**

Joseph Kennedy • Stefanie R. Whitson, Ph.D. • Manuel F. Santiago, Ph.D.

**HETEROLEPTIC PALLADIUM (II) AND PLATINUM (II) COMPLEXES
CONTAINING A CROWN THIOETHER AND MONODENTATE
PHOSPHINES**

Trevor Latendresse • John P. Lee, Ph.D. • Gregory J. Grant, Ph.D.
• C. Luke Keller

**QUANTIFICATION OF THE UREMIC TOXIN P-CRESOL IN SERUM OF
ESRD AND NORMAL PATIENTS**

JasLynn Murphy • Stefanie R. Whitson, PhD • Manuel F. Santiago, Ph.D.

**NICOTINE AND WHAT ELSE? HPLC ELUTION OPTIMIZATION FOR THE
ANALYSIS OF ALKALOIDS IN E-CIGARETTES**

Jessica L. Murray • Gretchen E. Potts, Ph.D.

**SOLID PHASE EXTRACTION METHOD FOR THE SIMULTANEOUS
DETERMINATION OF AN AMINOGLYCOSIDE AND A GLYCOPEPTIDE
FROM A BIODEGRADABLE MEDICAL IMPLANT**

John Patrick O'Brien • Steven Symes, Ph.D.

**DETERMINATION OF THE RELEASE TIME OF TWO ANTIBIOTICS
EMBEDDED IN A NANOFIBER MESH APPLICABLE TO LIMB SALVAGE**

Caitlin Quinn • Steven Symes, Ph.D.

**SYNTHESIS, CHARACTERIZATION, AND REACTIVITY OF RUTHENIUM
(II) COMPLEXES WITH FLUORINE-CONTAINING PHOSPHINES**

Ashley Riner • John P. Lee, Ph.D.

Criminal Justice

**BLURRING THE LINES: IMAGES OF RAPE AND THE SUPPORT OF RAPE
MYTHS IN COMIC BOOKS**

Mackenzie Grimes • Tammy S. Garland, Ph.D. • Kathryn Branch, Ph.D.

**BYSTANDERS AND BULLYING: A REFLECTIVE ANALYSIS OF COLLEGE
STUDENTS' PAST EXPERIENCES**

Katherine Larsen • Tammy S. Garland, Ph.D.

English

CHEROKEE REMOVAL RHETORIC: PAST AND PRESENT

Rebecca Jones, Ph.D. • Ellen Barrows • Rachel Carpenter • Ryan Hayes
• Krystle Luttrell • Tara Ray • Caroline Thatcher

History

CATHERINE OF BRAGANZA: CHARLES II'S NEGLECTED QUEEN

Michelle White, Ph.D.

Mathematics

**EMPIRICAL BAYESIAN SELECTION OF HYPOTHESIS TESTING
PROCEDURES FOR ANALYSIS OF DIGITAL GENE EXPRESSION MRNA
DATA**

Cuilan Gao, Ph.D.

Physics, Geology, and Astronomy

**MATERIAL PROPERTIES OF A 100 YEAR OLD FORGED WELD FROM A
LOCOMOTIVE BOILER**

Tatiana Allen, Ph.D. • G.M. Ray • W.L. Roes

**PETROGRAPHIC ANALYSIS OF SILURIAN ROCKWOOD STRATA NEAR
CHATTANOOGA, TN**

Amanda R. Brown • Ann E. Holmes, Ph.D.

**DESIGN AND INTEGRATION OF THE n³He EXPERIMENT AT OAK RIDGE
NATIONAL LABORATORY**

Caleb Wickersham • Joshua Hamblen, Ph.D.

Political Science, Public Administration, and Nonprofit Management

E-GOVERNANCE: A FUNCTION OF FUNDING?

Matthew McDarmont • Stephanie Bellar, Ph.D. • Joe Dumas, Ph.D.

Psychology

**USING THE SLIP INDUCTION TASK TO MEASURE ATTENTION
IMPAIRMENTS IN ACQUIRED BRAIN INJURY**

R. Christopher Branson • Amanda J. Clark, Ph.D. • Deirdre Dawson, Ph.D.
• Carrie LeMay • Eric Roy, Ph.D.

COGNITIVE ABILITY AND COMPUTER SIMULATION

Charles Buford • Brian O'Leary, Ph.D. • Michael Biderman, Ph.D.
• Christopher Cunningham, Ph.D. • Joe Dumas, Ph.D.

**PREDICTING FLUID INTELLIGENCE FROM WORKING MEMORY AND
SECONDARY MEMORY IN OLDER ADULTS: WORKING MEMORY IS
STILL SPECIAL**

Eddie Christopher • Jill Shelton, Ph.D. • Melanie Bauer

**EXPLORING THE USE OF NON-COGNITIVE FACTORS IN PREDICTING
COLLEGE ACADEMIC OUTCOMES**

Ashley Cooper • Christopher Cunningham, Ph.D.

**ASSESSING EXECUTIVE FUNCTION AS IT RELATES TO SELF-
REGULATION**

Sarah K. Finley • Amanda J. Clark, Ph.D.

**EXAMINATION OF PERSONALITY CHARACTERISTICS AMONG
CYBERSECURITY AND INFORMATION TECHNOLOGY PROFESSIONALS**

Sarah Freed • Bart Weathington, Ph.D.

**VARIABILITY IN OLFACTORY DETECTION THRESHOLDS IN END-STAGE
RENAL DISEASE PATIENTS**

Joseph W. Jones • I. Nicky Ozbek, Ph.D. • Mathew P. McCurdy
• James A. Tumlin, M.D.

**THE HORMONAL MYSTERY: OLFACTORY SENSITIVITY AND HORMONE
FLUCTUATION THROUGHOUT THE MENSTRUAL CYCLE**

Carrie C. LeMay • I. Nicky Ozbek, Ph.D. • Ashley Galloway • William Tewalt

**BREAKING THE RULES: MEASURING EXECUTIVE DYSFUNCTION WITH
THE MULTIPLE ERRANDS TEST**

Carrie C. LeMay • Amanda J. Clark, Ph.D. • Nicole Anderson
• Deirdre Dawson, Ph.D.

**DEPRESSION SCORES AS A PREDICTOR OF OLFACTORY SENSITIVITY IN
END-STAGE RENAL DISEASE PATIENTS**

Mathew P. McCurdy • I. Nicky Ozbek, Ph.D. • Joseph W. Jones
• James A. Tumlin, M.D.

CHARACTERIZATION OF ADHD USING THE SLIP INDUCTION TASK

Allen Nida • Amanda J. Clark, Ph.D. • Hailey Ward

FACTORS AFFECTING PERFORMANCE ON EDUCATION TASKS

Jill Shelton, Ph.D. • Ashley Burgess • Olivia Howard • Alyssa Ison
• Lindsey Parenteau • Eddie Christopher • Iain Scott

**THE EFFECTS OF HUNGER ON OLFACTORY PERFORMANCE IN A
HEALTHY POPULATION**

Naomi Whitson • I. Nicky Ozbek, Ph.D. • Maria Matty

Sociology, Anthropology and Geography

**AN ARCHAEOLOGICAL SURVEY OF CANNON'S POINT PLANTATION:
DEFINING CULTURAL BOUNDARIES**

Sara Bean • Nicholas Honerkamp, Ph.D. • Mark Babin • Melissa Darroch
• Ben Seay

**WHAT IS BEAUTY: COLLEGE STUDENTS' ATTITUDES, PERCEPTIONS,
AND UNDERSTANDINGS OF THE CONCEPT OF BEAUTY**

Nicole Caldwell • Marcyln Porter

NATIVE AMERICAN TALKING CIRCLE IN THE CLASSROOM

H. Lyn Miles, Ph.D. • Ross van der Harst

**RELIGION & INTERRACIAL DATING FOR THE MILLENNIAL
GENERATION**

Danielle Mullen • Marcyln Porter

TIME WELL SPENT: A LOOK AT PARENT AND CHILD INTERACTION

Hielene Tubbs • Marcyln Porter

Southeast Center for Education in the Arts

ARTS EDUCATION IN THE SOUTH PHASE II: PROFILES OF QUALITY

Joel Baxley • Susanne Burgess, M.M., Ed.D. • Laurie Melnik

Theatre and Speech

**UTC THEATRE COMPANY, 2013-2014 SEASON: MILL FIRE, YOU CAN'T
TAKE IT WITH YOU, NO EXIT**

Gaye Jeffers, M.F.A. • John Burgess, M.F.A. • Adam Miecielica, M.F.A.
• Stephanie Henderson, M.F.A.

UTC STEM Education

CREATING BIOFUELS

Erin Perry • Lisa Wilkes, M.A. • Mariefel Olarte • Asanga Padmaperuma
• Iva Tews

COLLEGE OF BUSINESS

ARTICLES & ABSTRACTS

College of Business Faculty

A STUDY IN DATA ANALYTICS AND HEALTHCARE

Sonja Asllani • Christine Estoye • Ashish Gupta, Ph.D.

**PREDICTING FUTURE DEMAND FOR BLOOD PRODUCTS AT BLOOD
ASSURANCE**

Tanya Gilstrap • Robert Vinglas • Ashish Gupta, Ph.D.

USING BUSINESS ANALYTICS TO DETERMINE INVESTMENT STRATEGY

Marsha McClure • Ashish Gupta, Ph.D.

PREDICTING MARCH MADNESS

Robin Moldenhauer • Ashish Gupta, Ph.D.

PREDICTING COMPONENT MALFUNCTION IN ASUS NOTEBOOKS

Brett Senentz • Ashish Gupta, Ph.D. • Aaron DeLaughter

**USING SOCIAL MEDIA ANALYTICS TO UNDERSTAND E-CIGARETTES
USAGE**

Madhuri Siddulagari • Ashish Gupta, Ph.D. • Rupinder Gupta

**COLLEGE OF ENGINEERING AND
COMPUTER SCIENCE**

Civil & Chemical Engineering

**CHARACTERIZING THE IMPACT OF AGGREGATE SHAPE ON CONCRETE
PROPERTIES**

Brandon Ennis • Joseph Owino, Ph.D., P.E.

AIChE CHEM-E-CAR

Frank Jones, Ph.D. • Zoe Braden • Luis Fortin • Ben Kegley
• Brooke Washburn

**THE EFFECTS OF CO-SOLVENT AND ORDERED LATTICE STRUCTURES
ON CATALYSIS OF BIODIESEL PRODUCTION IN MICROREACTORS**

Frank Jones, Ph.D. • Ben Kegley • Matt Littell

Computational Engineering / SimCenter

**DYNAMIC ADAPTATION IN HIGHER-ORDER FINITE ELEMENT
METHODS**

Behzad Reza Ahrabi • W. Kyle Anderson, Ph.D.

**DEVELOPMENT OF AN UNSTRUCTURED SOLUTION ALGORITHM FOR
THE SHALLOW WATER EQUATIONS WITH FLOODING APPLICATIONS**

Faranak Behzadi • Lafe Taylor, Ph.D.

**SOLUTIONS TO THE CHEMICAL INVERSE PROBLEM USING GRADIENT
BASED DESIGN METHODOLOGIES**

Nicholas Currier • James C. Newman, III, Ph.D.

**PHYSICS-BASED POINT PLACEMENT BY PARTICLE DYNAMICS
SIMULATION**

Philip Fackler, M.S. • Steve L. Karman, Jr., Ph.D.

**SPACE_TIME SPECTRAL/PSEUDO-SPECTRAL ELEMENT METHOD FOR
COMPLEX GEOMETRIES**

Arash Ghasemi • Lafe Taylor, Ph.D.

SIMULATION OF AIRFLOW AND PARTICLE DEPOSITION IN THE LUNGS

Ross Gruetzemacher • Abdollah Arabshahi, Ph.D.

**WASHINGTON, DC, FROM GIS DATA TO A WATERTIGHT,
COMPUTATIONAL GRID**

Ethan Alan Hereth • Kidambi Sreenivas, Ph.D.

**2-D CFD DESIGN OF THE CROSS-SECTIONAL SHAPE OF ARTERIAL
STENTS**

Kristen Karman, M.S. • W. Kyle Anderson, Ph.D.

**A STREAMLINED/UPWIND PETROV-GALERKIN OVERSET GRID SCHEME
FOR NAVIER-STOKES EQUATIONS WITH MOVING DOMAINS**

Chao Liu • James C. Newman, III, Ph.D.

**EXPLORATION OF MODAL DECOMPOSITION TECHNIQUES FOR WIND
TURBINES**

Anshul Mittal • Lafe Taylor, Ph.D. • Kidambi Sreenivas, Ph.D.

**EXTENSION OF A HIGH-ORDER PETROV-GALERKIN IMPLEMENTATION
APPLIED TO NON-RADIATING AND RADAR CROSS SECTION
GEOMETRIES**

Lawton Shoemake • W. Kyle Anderson, Ph.D.

Computer Science & Engineering

**ACUTE CORONARY SYNDROME DIAGNOSIS WITH DEEP LEARNING
TECHNIQUE**

Abdulaziz Alrasheed • Claire McCullough, Ph.D.

**NIFTY ASSIGNMENTS: ENGAGING COMPUTER SCIENCE STUDENTS
WITH SIMULATION PROJECTS**

Joe Dumas, Ph.D.

**NETWORK BASED ANALYSIS OF COPY NUMBER VARIATION RELATED
GENE CLUSTERS IN HEALTH DISPARITIES**

Yi Jiang • Li Yang, Ph.D. • Hong Qin

CLUSTERING

Shahabedin Hassani • Li Yang, Ph.D.

**A 360-DEGREE APPROACH TO PROVIDE ULTIMATE CONTROL AND
SECURITY OVER DATA STORAGE WITHIN CLOUD COMPUTING**

Adrian Martell Powell • Farah Kandah, Ph.D.

PROTECTING MOBILE HEALTHCARE APPLICATIONS IN THE CLOUD

Eric Reinsmidt • Li Yang, Ph.D.

**QUALITY OF SERVICE ASSURANCE USING THE GLOBAL ENVIRONMENT
FOR NETWORK INNOVATIONS (GENI)**

Raj Thakkar • Farah Kandah, Ph.D.

Industrial Engineering

**THE INTEGRATION OF REAL-TIME CONTROL THEORY FOR AN
OPERATING ROOM SCHEDULING APPLICATION**

John Russell Baker • Bryan Emnis, Ph.D.

**COLLEGE OF HEALTH, EDUCATION
AND PROFESSIONAL STUDIES**

Center for Community Career Education

UPWARD BOUND MATH AND SCIENCE PROGRAM OUTCOMES

Twyler Boykin • Angel Ulmer • Kristina McClure

UPWARD MOBILITY WITH UPWARD BOUND

Belinda Brownlee

PAWS: PAST, PRESENT, & FUTURE

Sandy Cole • Jonathan Brocco • Bernie Smith

EACH ONE REACH ONE

Sandy Cole

GEAR UP COLLEGE READINESS AND PREPAREDNESS

Hunter Huckabay, Ph.D.

HAMILTON COUNTY EDUCATIONAL TALENT SEARCH

Karen Vann

**EFFECT OF AEROBIC CAPACITY ON SPRINT PERFORMANCE IN COLLEGE
FOOTBALL LINEMAN**

Nicholas F. Bianco • Kyle S. Strunk • Gary B. Wilkerson, Ed.D., A.T.C.

**STATIC ANALYSIS OF LUMBAR COMPRESSION LOAD IMPOSED BY
OLYMPIC-STYLE WEIGHTLIFTING IN FEMALE COLLEGE ATHLETES**

Sammantha E. Brockel • Amanda J. Cagle • Marisa Colston, Ph.D., A.T.C.
• Gary B. Wilkerson, Ed.D., A.T.C.

**POTENTIAL FOR IMPROVEMENT OF VISUOMOTOR REACTION TIME
AMONG COLLEGIATE ATHLETES**

Ryan A. Clark • K. Andrew Simpson • Marisa Colston, Ph.D., A.T.C.
• Gary B. Wilkerson, Ed.D., A.T.C.

**EFFECT OF SUB-OCCIPITAL INSTRUMENT-ASSISTED SOFT TISSUE
MOBILIZATION ON VISUOMOTOR REACTION TIME**

Lindsay M. Cope • Joshua L. Ivens • Marisa Colston, Ph.D., A.T.C.
• Gary B. Wilkerson, Ed.D., A.T.C.

**PREDICTION OF OVERUSE SYNDROMES IN COLLEGE ATHLETES
THROUGH PRESEASON SCREENING**

Kirsten Ely, M.S., A.T.C. • Brienna Morris, M.S., A.T.C. • Marisa Colston,
Ph.D., A.T.C. • Gary B. Wilkerson, Ed.D., A.T.C.

**COMPARING PHYSIOLOGICAL RESPONSES AMONG AEROBIC EXERCISE
TESTING PROTOCOLS IN YOUNG ADULT MEN**

Wade Evans • Nicholas Boer, Ph.D.

**EVALUATION OF A SURVEY INSTRUMENT FOR ASSESSMENT OF INJURY
RISK AMONG ATHLETES**

Jade C. Evink, M.S., A.T.C. • Lynette E. Fitts, M.S., A.T.C. • Gary B.
Wilkerson, Ed.D., A.T.C.

**ADVENTURE TOURISM: IMPACT OF TOURISTS AT RIVERROCKS
OUTDOOR FESTIVAL**

Scottie Hill • Andrew W. Bailey, Ph.D.

**EFFECT OF NEGATIVE LIFE EVENTS ON VISUOMOTOR PERFORMANCE
AND INJURY INCIDENCE**

Anna Marie Jones • Sharon West • Gary B. Wilkerson, Ed.D., A.T.C.
• Marisa Colston, Ph.D., A.T.C.

**SOCIAL, CULTURAL, & ENVIRONMENTAL IMPACTS OF ADVENTURE
TOURISM: A LOCAL PERSPECTIVE**

Kaitlyn Kincaid • Molly Boyd • Andrew W. Bailey, Ph.D.

**ASSOCIATION OF METABOLIC STATUS TO PERFORMANCE RATES
AMONG COLLEGIATE FOOTBALL LINEMAN**

Jesse R. Littlefield, M.S., A.T.C. • Madeleine E. Pryzbyl, M.S., A.T.C.
• Gary B. Wilkerson, Ed.D., A.T.C.

**PRESEASON SCREENING OF COLLEGIATE FOOTBALL PLAYERS FOR
ASSESSMENT OF INJURY RISK**

Eric Mathis, B.S. • Ian Carruthers, B.S., A.T.C.
• Gary B. Wilkerson, Ed.D., A.T.C.

**A BRIEF ANALYSIS OF SOCIAL CONNECTEDNESS, ENGAGEMENT, AND
BINGE DRINKING AT UTC**

Jessica Peacock, Ph.D. • Amanda Hall

CHANGES IN ANAEROBIC POWER IN ROTC CADETS

Meredith Piacentini • Gary Liguori, Ph.D.

**IDENTIFICATION OF PATELLAR TENDINOPATHY RISK FACTORS
COMBINED WITH ULTRASONOGRAPHY**

Meredith Piacentini • Sheena MacGowan • Gary B. Wilkerson Ed.D., A.T.C.

**CASE-CONTROL ANALYSIS OF CHRONIC ANKLE INSTABILITY IN
FEMALE COLLEGE ATHLETES**

Erica Zabkar • Timothy J. Zinke • Gary B. Wilkerson Ed.D., A.T.C.

**COLLABORATING WITH TECHNOLOGY? AN INVESTIGATIVE LOOK AT
THE USE OF IPAD APPS IN HIGHER EDUCATION**

Jessica Etheredge • Ashley Cooper • Catherine Kendall • Dana Moody, Ph.D.

**GROUP PROJECTS WITH MILLENIALS: THE QUESTION OF NOT
WHY...BUT HOW**

Catherine Kendall • Jessica Etheredge • Dana Moody, Ph.D.

INTERIOR DESIGN: UNDERSTANDING EXTRINSIC PERCEPTIONS

Dana Moody, Ph.D. • Gregory Petty

**THE HISTORIC ST. GEORGE HOTEL: USING DESIGN TO CONNECT
STUDENTS TO URBAN REVITALIZATION**

Dana Moody, Ph.D. • Elizabeth Carroll • Jessica Etheredge
• Catherine Kendall

**DESIGNING FOR DISABILITIES: MORE THAN A POLITICALLY CORRECT
STATEMENT**

Dana Moody, Ph.D. • Angela Ballard

**MANDATORY ETHICS & JURISPRUDENCE: DOES IT MAKE A DIFFERENCE
IN DISCIPLINARY ACTIONS OF OCCUPATIONAL THERAPY
PROFESSIONALS?**

Susan S. McDonald, Ed.D., OTR/L

3D ANALYSIS OF THE NORMAL HAND USING ADAPTIVE EQUIPMENT

Lauren Aguilar • Susan S. McDonald, Ed.D., OTR/L
• David Levine, PT, Ph.D., DPT, OCS, CCRP, Cert. DN

**IDENTIFYING THE BRAIN REGION RESPONSIBLE FOR ACUTE
HYPERTONICITY IN PATIENTS POST-STROKE**

Susan J. Barlow, DPT, Ph.D., NCS • Katie Perry
• Susanne Purdy

**THE EFFECTS OF CLASS IV LASER THERAPY UPON LOW-FREQUENCY
FATIGUE OF THE QUADRICEPS**

R. Barry Dale, Ph.D., PT • David Levine, PT, Ph.D., DPT, OCS, CCRP, Cert.
DN • K. Bowers, DPT • E. Kelley, DPT • M. Leemkuil, DPT
• B. Martin, DPT

**VALIDATION OF THE FUNCTIONAL REACH TEST IN A MOBILE
PLATFORM: A PILOT STUDY**

Nancy Fell, PT, Ph.D., NCS • Brandon Allen • Kelsey Lowry
• Mina Sartipi, Ph.D. • Emily Smith • Bianca Wade

**EXPERT VERSUS NOVICE INTRARATER AND INTERRATER RELIABILITY
OF THE FRONTAL PLANE PROJECTION ANGLE**

Hanna Handley • Jeremiah Tate, PT, Ph.D. • Carrie Baker, Ph.D., ATC
• R. Barry Dale, Ph.D., PT

PATIENTS' PERCEPTIONS OF PHYSICAL THERAPIST APPEARANCE

Debbie Ingram, PT, Ed.D., FAPTA • Nancy Fell, PT, Ph.D., NCS
• Ben McChesney, DPT • Ashley Danehy, DPT • Savannah Hixson, DPT

**CLINIC DIRECTORS' PERCEPTIONS OF PHYSICAL THERAPIST PHYSICAL
APPEARANCE**

Debbie Ingram, PT, Ed.D., FAPTA • Nancy Fell, PT, Ph.D., NCS
• Libby English • Heather Nethery • Courtney Williams

**EFFECTS OF 1.0 MHZ ULTRASOUND ON EPAXIAL MUSCLE
TEMPERATURE IN HORSES**

David Levine, PT, Ph.D., DPT, OCS, CCRP, Cert. DN • Steve Adair, M.S.,
DVM • Stephen Tilstra, S.P.T • Andrew Tobias, S.P.T

THE EFFECTS OF MOVEMENT TRAINING WITH AND WITHOUT OPEN-CHAIN HIP STRENGTHENING ON FRONTAL PLANE PROJECTION ANGLE IN HEALTHY COLLEGE-AGE FEMALES

Abagale Reddy • Meredith Russell • Jeremiah Tate, PT, Ph.D. • Jessica Knight

PARTICIPATION IN PERSONS WITH MOBILITY CHALLENGES: A COMPARISON OF YOUNG ADULTS LIVING IN THE UNITED STATES AND CZECH REPUBLIC

Catherine R. Smith, PT, DPT, Ph.D., PCS • Sue Barlow, PT, DPT, Ph.D., NCS
• Megan Barrowclough • Katie Henson • Michelle Martin

HEAD SHAPE VARIABILITY IN PRETERM AND FULL-TERM INFANTS

Catherine R. Smith, PT, DPT, Ph.D., PCS • Sue Barlow, PT, DPT, Ph.D., NCS
• Kaylea Fields • Krystal Murphy • Megan Zimmerman

RELATIONSHIP OF THE INTERCRESTAL LINE AND L4 VERTEBRA

J. Randy Walker, Ph.D., PT • Larry Tillman, Ph.D. • R. Kent Huston, MD
• Emily Lowndes, SPT • James Sircy, SPT • Thomas Walther, SPT

School of Education

DEGREE +3: DATA DRIVEN TEACHING

Jonathan Brocco • Logan York • Pam Carter, Ph.D.

PREDICTION MODELING FOR BOC EXAM SUCCESS FOR STUDENTS FROM A GRADUATE ATHLETIC TRAINING PROGRAM

Scott L. Bruce, M.S., A.T.C. • Beth Crawford, Ed.D. • Gary B. Wilkerson, Ed.D., A.T.C. • David Rausch, Ph.D. • R. Barry Dale, Ph.D., PT
• Martina Harris, Ed.D., RN

PREDICTION MODELING FOR GRADUATE ATHLETIC TRAINING EDUCATION PROGRAM SUCCESS – INITIAL MODEL

Scott L. Bruce, M.S., A.T.C. • Beth Crawford, Ed.D. • Gary B. Wilkerson, Ed.D., A.T.C. • David Rausch, Ph.D. • R. Barry Dale, Ph.D., PT
• Martina Harris, Ed.D., RN

**PREDICTION MODELING FOR GRADUATE ATHLETIC TRAINING
EDUCATION PROGRAM SUCCESS – ALTERNATE MODEL**

Scott L. Bruce, M.S., A.T.C. • Beth Crawford, Ed.D. • Gary B. Wilkerson,
Ed.D., A.T.C. • David Rausch, Ph.D. • R. Barry Dale, Ph.D., PT
• Martina Harris, Ed.D., RN

**AN AUTOMATED FORMAT FOR PRESENTATION OF INCREMENTAL
REHEARSAL**

Joel Cilio, Ed.S. • Sara Bowling, Ph.D. • Pam Guess, Ph.D.

**STRUCTURED COURSE FRAMEWORK FOR DISSERTATIONS AND MORE:
UTILIZING LMS TO ACHIEVE SUCCESS**

Beth Crawford, Ed.D. • David Rausch, Ph.D.

ASIAN STUDIES: PEDAGOGICAL SCHOLARSHIP

Lucien Ellington, Ed.D. • Zackary Flowers, B.A.

**TEACHER SUPPORT, LIFE SATISFACTION, AND URBAN MIDDLE
SCHOOL STUDENTS**

Pam Guess, Ph.D. • Sara Bowling, Ph.D.

**FACULTY PARTICIPATION IN PROBLEM-BASED LEARNING: A TOOL FOR
CRITICAL THINKING**

Cheryl Robinson, Ph.D.

**THE RELATIONSHIP BETWEEN AFRICAN-AMERICAN MALE COLLEGE
RETENTION AND STUDENT ORGANIZATION PARTICIPATION**

Elizabeth Snelling • Jim Tucker, Ph.D.

AN EXPLORATORY STUDY OF THE CLASSICAL MUSIC EXPERIENCE

Mary Katherine Wilson • Beth Crawford, Ed.D.
• Elizabeth O'Brien Oden, Ph.D.

**A STUDY OF THE EFFECTS OF EARLY CHILDHOOD FAMILY EDUCATION
FOR AT-RISK CHILDREN AND THEIR PARENTS**

Kim Wingate, Ph.D. • Carol Brand, Ph.D. • Katy Green

**EMOTIONAL INTELLIGENCE TRAINING FOR LEADERSHIP
DEVELOPMENT IN ADVANCED PRACTICE NURSE MANAGERS**

Melissa Bogle, MSN, APN • Joanie Jackson, DNP, APRN, FNP-BC

**IMPLEMENTATION OF PROPOFOL ACCOUNTABILITY IN AN OPERATING
SUITE**

Donnie Carter, CRNA, MSN • Carolyn Schreeder, DM, MSN

**CHLORHEXIDINE BATHING IN THE ICU TO DECREASE HOSPITAL
ACQUIRED INFECTIONS**

Bernadette DePrez, MBA, MSN • Carolyn Schreeder, MSN, DM
• Susan Davidson, Ed.D., APRN, NP-C • Wanda Perry, MHA, NE-BC

**SOCIAL SUPPORT IN STUDENTS' DECISION FOR ONLINE VERSUS
HYBRID LEARNING**

Sarah Finley • Susan Davidson, Ed.D., APRN, NP-C • Richard Metzger, Ph.D.

SHARED GOVERNANCE

Morella Herington, RN, MSN • Carolyn Schreeder, DM, MSN

**ASSESSING CRITICAL THINKING IN UNDERGRADUATE NURSING
RESEARCH STUDENTS: A THINKACHIEVE GRANT INITIATIVE**

Jenny Holcombe, Ph.D.

IMPROVING THE WORK ENVIRONMENT WITH MAGNET EDUCATION

Miriam T. Knight, MSN, APRN, CNS-BC
• Joanie Jackson, DNP, APRN, FNP-BC

**IMPLEMENTATION OF AN EVIDENCE-BASED PARTURIENT-
CONTROLLED EPIDURAL ANALGESIA (PCEA) PROGRAM IN A LABOR &
DELIVERY UNIT**

Scott Monterde, MSN, CRNA • Joanie Jackson, DNP, APRN, FNP-BC

A MULTIFACETED INFECTION CONTROL PROGRAM FOR MEDICAL AND DENTAL TRAINEES

Marian Morgan, MSN, FNP-C • Joanie Jackson, DNP, APRN, FNP-BC

PROFESSIONAL QUALITY OF LIFE IN NEW GRADUATE PEDIATRIC ONCOLOGY NURSES ENROLLED IN A NURSE RESIDENCY PROGRAM

Stephanie Nikbakht, MSN, PPCNP-BC

• Joanie Jackson, DNP, APRN, FNP-BC

IMPLEMENTATION OF A HOUSE CALLS PROGRAM

Carolyn Schreeder, DM, MSN • Christopher J. L. Cunningham, Ph.D.

• Candace J. Bishop, DNP, APN, FNP-BC • Christopher Silver, Ed.D.

• Elizabeth Smith • Nikcole Hayes • Stephanie West

BOWEL ELIMINATION: A TEAM APPROACH

Robin Zachary, Ed.S., MSN, RN • Carolyn Schreeder, DM, MSN

INTEGRATING CARE FOR THE SEVERE AND PERSISTENTLY MENTALLY ILL AT POINT OF SERVICE: THE USE OF TAI CHI WITH GROUP HOME RESIDENTS

Miriam Zwitter, Ph.D., RN • Zibin Guo, Ph.D. • Carrie Ezell, MA

PARTNERSHIPS TO INTEGRATE CARE: COMMUNITY MENTAL HEALTH CENTER AND SCHOOL OF NURSING PARTNER TO PROVIDE WELLNESS SERVICES TO THE SEVERE AND PERSISTENTLY MENTALLY ILL POPULATION

Miriam Zwitter, Ph.D., RN • Angelique Cook, M.B.A. • Rachel Nall, B.S.N., RN

VIOLENCE IN THE HEALTHCARE SETTING: EMPOWERING NURSING STUDENTS THROUGH THE USE OF DE-ESCALATION TRAINING

Miriam Zwitter, Ph.D., RN

EXAMINING CHALLENGES IN DATA COLLECTION WITH SEVERE AND PERSISTENTLY MENTALLY ILL CLIENTS IN THE GROUP HOME SETTING

Miriam Zwitter, Ph.D., RN • Christopher Pell, Ph.D.

Social Work

**AN EXPLORATION OF THE IMPACT OF EDUCATION OPPORTUNITY
COUNSELING ON LOW INCOME FIRST GENERATION COLLEGE
STUDENTS**

Marla King • Amy Doolittle, Ph.D., LCSW

ADMINISTRATION

Dean of Students Office

**A CULTURAL IMMERSION & SERVICE LEARNING EXPERIENCE: THE
UTC ALTERNATIVE WINTER BREAK TRIP TO NYC**

Justin Pohl, M.Ed. • Emily Neutens

Library

THE JOURNALS OF EMMA BELL MILES

Steven Cox

THE GAME OF RESEARCH

Nicole Tekulve • Jaime Myers

UTC RESEARCH DAY 2014

ORAL PRESENTATIONS

University Center • Chattanooga Room C

9:15

VIDEO SELF-MODELING: 7 YEARS OF RESEARCH AT SISKIN CHILDREN'S INSTITUTE

Tom Buggley, Ph.D.
School of Education

9:30

RISK FACTORS ASSOCIATED WITH CHILDHOOD LEAD POISONING IN TENNESSEE

Dawn Ford, Ph.D. • Vasileios Margaritis, Ph.D. • Aaron Mendelsohn, Ph.D.
Walker Center for Teaching and Learning and Walden University

9:45

MYELOMENINGOCELE

Martin Davis • Bryon Kluesner, Rh.D.
Biological and Environmental Sciences

10:00

EDUCATIONAL ATTAINMENT AND HEALTH OUTCOMES IN TENNESSEE

Gary Maynard, Ph.D. • Matt Woods
Sociology

10:15

UTC'S POLICIES REGARDING INTIMATE PARTNER VIOLENCE AMONG STUDENTS

Macy Licht • Marclyn Porter, Ed.D.
Sociology

10:30

A Tale of Two Prehispanic Fortresses

Andrew Workinger, Ph.D.

Anthropology

10:45

**WORKING ON THE DOCK OF THE BAY: LABOR AND ENTERPRISE IN AN
ANTEBELLUM SOUTHERN PORT**

Michael Thompson, Ph.D.

History

11:00

**INTERMISSION WITH REMARKS FROM CHANCELLOR STEVEN ANGLE,
PH.D. AND PROVOST A. JERALD AINSWORTH, PH.D.**

Tennessee Room

11:30

**WHAT WORLD WAR I DID TO THE HUMAN FACE: JOHN DOS PASSOS
AND ANNA COLEMAN LADD**

Aaron Shaheen, Ph.D.

English

11:45

HOW DO WE THINK OF DYSLEXIA?

Andrew Cole • Jim Tucker, Ph.D.

Educational Psychology

12:00

EACH ONE REACH ONE: PAST, PRESENT, AND FUTURE

Jonathan Brocco • Sandy Cole

Center for Community Career Education

12:15

PAWS: PAST, PRESENT, AND FUTURE

Bernie Smith • Sandy Cole • Jonathan Brocco

Center for Community Career Education

12:30

**A NUMERICAL INVESTIGATION OF COMPRESSIBLE FLOW IN A CURVED
S-DUCT**

Tony McDaniel • Lafe Taylor, Ph.D.
Computational Engineering

12:45

**OPERATIONS RESEARCH IN ECONOMIC DEVELOPMENT AND SOCIAL
MOBILITY**

Aniekan Ebiefung, Ph.D.
Mathematics

1:00

**WASTE BIOMASS IN PORTLAND CEMENT CONCRETE: UTILIZING
RENEWABLE RESOURCES IN THE BUILT ENVIRONMENT**

A. Brent Rollins
Civil Engineering

1:15

**EXPERIENTIAL STUDENT RESEARCH TO SUPPORT THE CONSERVATION
OF A RARE LOCALLY ENDEMIC ORCHID SPECIES**

Jennifer Boyd, Ph.D.
Biological and Environmental Sciences

1:30

DIVERSITY OF BEETLES IN SPANISH AMBER

Stylianos Chatzimanolis, Ph.D.
Biological and Environmental Sciences

1:45

**A REPORT ON THE PATRICIA GEORGE FLUTE SPA: A LECTURE ON
PEDAGOGY, PERFORMANCE HEALTH, AND MUSICAL INTERPRETATION**

Heather Small, D.M. • Samantha Beaston • Ashley Closson
Music

2:00

**ALLAN DEAN'S RECITAL AS PART OF THE TRUMPET FESTIVAL OF THE
SOUTHEAST**

Erika L. Schafer, D.M.A.

Music

2:15

**FOCUS OF ATTENTION AFFECTS TONE PRODUCTION IN TRAINED
SINGERS**

Rebecca Atkins, Ph.D.

Music

2:30

**WHY BANDS STUCK: A HISTORICAL LOOK AT BANDS AND
PROGRESSIVE REFORM**

William Lee, Ph.D.

Music

2:45

CRITICAL ANALYSIS OF THE DEATH PENALTY IN TENNESSEE

Shela Van Ness, Ph.D.

Sociology

3:00

**LEARNING FROM LIES: HOW A FAKE PRINCE CAN REVEAL AMERICAN
ATTITUDES ABOUT AFRICA**

Sara Jorgensen, Ph.D.

History

3:15

**UN/DRESSING THE SPIRITS: POETRY INSPIRED BY SOUTHERN
AMERICAN VISIONARY FOLK ART**

Carrie Meadows, MFA

English

SYMPOSIA

UNIVERSITY CENTER UC FOUNDATION ROOM

9:30

PHYSICAL ACTIVITY AND THE IMPORTANCE OF PLACE

Moderator: Dr. Greg Heath

Panelists:

Dr. Drew Bailey

Ms. Kaitlyn Kincaid

Mr. John Bilderback

1:00

WOULD YOU WANT TO LIVE TO 100+?

AFFILIATED WITH TEDXUTC CLUB

Moderator: Dr. David Levine

Panelists:

Dr. Gary Wilkerson

Dr. Talia Welsh

Prof. Diedri White

Dr. Greg Heath

DEPARTMENTAL HONORS PRESENTATIONS

UNIVERSITY CENTER CHATTANOOGA ROOM C

4:00 PM

THE EFFECTS OF RELIGION ON THE PSYCHOLOGICAL WELL-BEING OF HOMOSEXUAL INDIVIDUALS

Maria Matty • Paul Watson, Ph.D.

PATENTING THE SUN: AN ANALYSIS OF THE MODERN SUPREME COURT'S RESPONSE TO EMERGING TECHNOLOGY

Steven Palmer • Michelle Deardorff, Ph.D.

WORDS AND DEEDS: THE RHETORIC AND REASONING THAT MOTIVATED EAST TENNESSEE TO FIGHT IN THE CIVIL WAR

James J. W. Scott • Michael Thompson, Ph.D.

MODERNIZING MODERN LANGUAGE INSTRUCTION: TEACHING INTERCULTURAL COMPETENCY THROUGH PARALLEL CURRICULUM

Hannah Seage • Sophia Seage • Victoria Steinberg, Ph.D.

TUNISIA: ISLAMISM, SECULARISM, AND FINDING A BALANCE

Mary Beth Shults • Jennifer Auchter, Ph.D.

PHENOMENOLOGY OF THE MUSICAL

Jordan Twaddle • Talia Welsh Ph.D.