Students in WCU’s new doctor of physical therapy program use technology in the Human Movement Science Lab to analyze gait.
Dear Participants,

Welcome to the 20th Annual Graduate Research Symposium. Since 1992, the Graduate Research Symposium, sponsored by Graduate School and Research, has provided graduate students the opportunity to showcase their scholarly research and projects. I want to express my sincere appreciation to you for sharing your scholarly and creative work. In addition, I congratulate all the participating faculty and staff mentors for supporting and encouraging our presenters to participate in this meaningful experience.

For many of you, this will be your first opportunity to share empirical findings and creative works with the academic community. Today, you take the first step in becoming recognized as a scholar in your chosen discipline. The skills that you learn as part of the research process and your ability to convey that research in writing and in person will enable you to establish your authority within your discipline and improve the world in which we live.

I congratulate you on this significant milestone in your academic development. It is my hope that your experience today inspires you to continue to contribute to our understanding of the significant issues facing our region, state, and world and propels you to take action.

I look forward to meeting each of you and having the opportunity to talk with you about your important work and your plans for the future. A celebration has been planned in your honor in the University Center Grand Room starting at 5:00 p.m. Please join your colleagues.

Scott E. Higgins
Dean, Graduate School and Research
Chief Research Officer
Student News Releases

WCU’s Office of Public Relations routinely sends news releases about student activities and honors to the students’ hometown/local newspapers. Students taking part in the 2012 Graduate Research Symposium who wish to take advantage of that service should visit the Web site http://www.wcu.edu/22961.asp to fill out an online form and submit it via e-mail to the Public Relations Office.

The Public Relations Office also can send photographs of students to their hometown/local newspapers to accompany the news releases. Students who wish to take advantage of that service are invited to come to Room 420 in H.F. Robinson Administration Building to have their photographs taken between 2 p.m. and 5 p.m. on one of these days: Thursday, April 19, or Tuesday, May 1.

Students with scheduling conflicts that prevent them from appearing at one of those photo sessions may make a special appointment to have a photo taken by calling the Public Relations Photography Office at 828-227-3081.

Students’ personal photos will be considered for use, depending on quality. Portrait-quality head-and-shoulders shots may be e-mailed to rholcomb@wcu.edu.

Western Carolina University

Western Carolina is a campus of the University of North Carolina system and enrolls more than 9,000 students. WCU is located in a beautiful valley between the Blue Ridge and Great Smoky Mountains, an hour west of Asheville, N.C., and 2.5 hours northeast of Atlanta, Ga. Here you will find convenient access to a region that offers tremendous opportunities for outdoor research and recreation. Engagement of students and faculty in service learning and other community activities is a critical part of WCU’s tradition of academic excellence.
11 a.m.–12:15 p.m.

COMMUNICATION SCIENCES & DISORDERS | UC 212 | Dogwood Room
DR. BILL OGLETREE, Communication Sciences & Disorders, Moderator

Social Skills Success for ASD Students: a Comprehensive Approach
Presenters: Phuong Lam, Lauren Ward, Courtney Pauly, Ben Stair, Ronica Reid, Allison King & Rachel Walker
Sponsors: Dr. Georgia Hambrecht & Dr. Bill Ogletree

Performance on a Picture-Word Verification Task by Bilingual Persons with Aphasia
Presenter: Amanda Graham
Sponsor: Dr. Leigh Odom

Emergent Potential Communicative Behaviors in Adults with the most Severe Developmental Disabilities
Research Competition Paper
Presenters: Suzannah Genz & Katie Reisinger
Sponsors: Dr. Billy T. Ogletree & Dr. John Wagaman

NURSING & COMMUNICATION SCIENCES & DISORDERS
UC 215 | Cardinal Room
DR. DAVID A. SHAPIRO, Communication Sciences & Disorders, Moderator

Do Patients Undergoing Induced Hypothermia Reach Goal Temperature Faster With use of Paralytics?
Presenter: Aubrey A. Balmer
Sponsor: Dr. Leslie Norris

Emotional Intelligence and Stuttering Intervention: A Case Study
Research Competition Paper
Presenter: Daniel Robert Bower
Sponsor: Dr. David A. Shapiro

Individualized Stuttering Intervention with a School-aged Child: a Case Study
Presenter: Derek Taylor
Sponsor: Dr. David A. Shapiro

SOCIAL SCIENCES | Public Affairs | UC 215 | Catamount Room
DR. CHRIS COOPER, Political Science and Public Affairs, Moderator

Use of Technology Policy: Waynesville, NC
Presenter: Brandon Hill
Sponsor: Dr. Chris Cooper

Scientific Education Visual Imagery
Presenter: Kasey Baker
Sponsor: Dr. Chris Cooper

Visitation in the N.C. State Park System
NC Research Paper
Presenter: Joshua Purdy
Sponsor: Dr. Chris Cooper
Coping, Stress, Support, and Life Satisfaction in Socially Anxious Students
Presenter: Stephanie Panchyschak & Jessica Kelliher
Sponsor: Dr. Kia Asberg

Evaluating MTurk: The Effect of Research Project Descriptions on Response Patterns
Presenter: Christopher J. Holden
Sponsor: Dr. Harold Herzog

Removal Trends for Offenders on the NC Sex Offender registry
Presenter: Jessica McIntyre
Sponsor: Dr. Alvin Malesky

Determination of Cell Viability of SOD Knockout Escherichia coli strains using Oxidative Stress Assays
Presenter: Christopher Beyer
Sponsor: Dr. Lori Seischab

Differences in Bacterial Communities in the Rhizosphere of Living and Dead Eastern Hemlock (Tsuga canadensis)
Presenter: Kendall Fuller
Sponsor: Dr. Sean O’Connell
12:30–1:45 P.M.

**HUMANITIES | English, History, & TESOL | UC 214 | Cardinal Room**

**DR. MIMI FENTON, English, Moderator**

**History, Violence, and Social Justice in Natasha Trethewey’s Native Guard**
- Presenter: Mai Nou Xiong
- Sponsor: Dr. Annette Debo

**“We Shall See With Open Eyes, Not Under a Veil”: A Survey of Milton’s Use of the Term “Veil”**
- Presenter: Josie Javens
- Sponsor: Dr. Mimi Fenton

**Artist to Diplomat: The Role of Cultural Perception in Thomas Nast’s Career**
*Research Competition Paper*
- Presenter: Jenna Stout
- Sponsor: Dr. Alexander Macaulay

**Evidence for a Deterministic Interpretation of the Sapir-Whorf Hypothesis: A Semantic Consideration of Thought and Thinking**
- Presenter: Luke Trawick
- Sponsor: Dr. Chandrika Balasubramanian

**SOCIAL SCIENCES | Public Affairs/Political Science | UC 215 | Catamount Room**

**DR. ROGER HARTLEY, Public Affairs, Moderator**

**Grants Management**
- Presenter: Patrick Bartholomew
- Sponsor: Dr. Chris Cooper

**Public Participation in the Planning Process**
- Presenter: Sarah Graham
- Sponsor: Dr. Chris Cooper

**Establishing North Carolina’s First Handicap Hunting Preserve**
- Presenter: Steve Johnson
- Sponsor: Dr. Dan Bromberg

**Disparities in Access to Healthy Food: A Look at Food Deserts in Western North Carolina**
- Presenter: Heather Hyatt
- Sponsor: Dr. Chris Cooper
SOCIAL SCIENCES | Psychology | UC 232A | Multipurpose Room A

DR. ADAM HICKS, Psychology, Moderator

A Test of Patrick’s Triarchic Model of Psychopathology: A Personality and Endocrinological Approach: Testosterone and Cortisol

Presenters: Lisa Vartanian, Kimberlee Cooper & Brittany Blanchard
Sponsor: Dr. Leonardo Bobadilla

Population Comparisons Between Dominant Groups of Mechanical Turk Users

Presenters: Christopher J. Holden & Trevor Dennie
Sponsor: Dr. Adam D. Hicks

The Influence of Need for Closure on Jury Decision Making

Presenters: Alynna Ohanmamooreni, Christopher Holden, Annie Kochersberger, Adam Hicks & Thomas E. Ford
Sponsor: Dr. Thomas E. Ford

BIOLOGY | UC 232B | Multipurpose Room B

DR. INDRANI BOSE, Biology, Moderator

Temporal and spatial movement patterns and habitat use of juvenile and adult sicklefin redhorse (Moxostoma sp.) in the Little Tennessee River Basin

Presenter: Kyle Stowe
Sponsor: Dr. Tom Martin

Correlation of Behavior and Aggression in Urban and Rural Song Sparrows

Presenter: Rachel Myers
Sponsor: Dr. Jeremy Hyman

Life History Traits of the Mirror Shiner, Notropis spectrunculus, in Western North Carolina

Research Competition Paper

Presenter: Adric Olson
Sponsor: Dr. Thomas H. Martin

“The truth will set you free. But first, it will piss you off.”

—Gloria Steinem
2:00–3:15 p.m.

ENGINEERING & TECHNOLOGY | UC 212 | Dogwood Room
DR. ROBERT ADAMS, Engineering & Technology, Moderator

Geophysical Research Recon Rover
Presenter: Corey McCraw
Sponsor: Dr. James Zhang

Overview of Effects of Timing Errors in OFDM Systems
Presenter: Farhan Farhan
Sponsor: Dr. James Zhang

The Effect of Wort Oxygenation on Beer Ester Concentration
Presenter: Benjamin Ward
Sponsor: Dr. James Zhang

HUMANITIES | English | UC 214 | Cardinal Room
DR. LAURA WRIGHT, English, Moderator

Rear Window Rhetoric
Research Competition Paper
Presenter: Hogan Carringer
Sponsor: Dr. Nathan Kreuter

Presidential Ceremonial Rhetoric: How the Declaration of the End of a War can Lead to Future Military Conflict
Research Competition Paper
Presenter: Robert J. Donnellan
Sponsor: Dr. Nathan Kreuter

“I am being asked to issue an apology?” Forgiveness in J.M. Coetzee’s Disgrace
Presenter: Mai Nou Xiong
Sponsor: Dr. Laura Wright

Poverty and Destruction of Native American and United States Society: Native American Literature’s Warning
Presenter: Greg Gallagher
Sponsor: Dr. Mae Miller Claxton

“We are not what we know but what we are willing to learn.”
—Mary Catherine Bateson
2:00–3:15 P.M. (continued)

BUSINESS ADMINISTRATION, ENTREPRENEURSHIP, & KIMMEL SCHOOL | UC 215 | Catamount Room
DR. KATHERINE GREYSEN, Graduate School & Research, Moderator

Real-World Information Systems Projects in the Classroom: Factors to Consider
Research Competition Paper
Presenter: Michael Taylor
Sponsor: Dr. Barbara Jo White

Small Business Clans: Could Clan Control Result in Increased Profits?
Research Competition Paper
Presenter: Ashley Gowen
Sponsor: Dr. Robert Carton

Network Traffic Anomaly Detection Using First Intrinsic Mode Function
Presenter: Jieying Han
Sponsor: N/A

SOCIAL SCIENCES | Psychology | UC 232A | Multipurpose Room A
DR. KIA ASBERG, Psychology, Moderator

Substance Use Coping as a Mediator between Academic Distress and Substance Use Problems
Presenter: Jessica Kelliher
Sponsor: Dr. Kia Asberg

Testosterone/Cortisol Ratio and Substance Use Consequences among Male Veterans with Substance Use Disorders
Presenters: Brittany Blanchard, Kimberlee Cooper & Lisa Vartanian
Sponsor: Dr. Kia Asberg

Perception of Autonomy and its Effect on Intrinsic Motivation, Enjoyment and Performance
Presenter: Trevor Dennie
Sponsor: Dr. William D. Poynter

BIOLOGY | UC 232B | Multipurpose Room B
DR. INDRANI BOSE, Biology, Moderator

Genetic Variation in Hydrastis canadensis Populations in Western North Carolina
Presenter: Jennifer M. Torgerson
Sponsor: Dr. Laura DeWald

Location and Simulated Harvest/Disturbance Effects on the Medicinal Herb, Chamaelirium luteum L
Presenter: Jill E. Bourdon
Sponsor: Dr. Beverly Collins

Characterization of Putative Acetate Kinase in the Pathogenic Yeast, Cryptococcus neoformans
Presenter: Beth Budden
Sponsor: Dr. Indrani Bose

The Effects of Rhododendron on Salamander Communities in the Nantahala Mountains
Presenter: Kyle Pursel
Sponsor: Dr. Joe Pechmann
3:30–4:45 P.M.

**COLLEGE OF EDUCATION & ALLIED PROFESSIONS** | UC 212 | Dogwood Room

**DR. CHERYL DALY**, College Student Personnel, Moderator

**Teaching Hispanic Students: Through Project-based/Student Directed Learning**

*Presenter:* Cheryl Wright  
*Sponsor:* Dr. Frederick Buskey

**An Assessment of Students’ Environmental Sustainability Literacy at Western Carolina University**

*Presenters:* Sarah Burkhardt, Annaleise Camacho, Becca McGrath  
*Sponsor:* Dr. Cheryl Daly

**The Entry Experiences, Challenges, and Mediating Strategies of Public School Superintendents**

*Research Competition Paper*  
*Presenter:* David M. Sutton  
*Sponsor:* Dr. Meagan Karvonen

**CHEMISTRY & PHYSICS/HEALTH SCIENCES** | UC 214 | Cardinal Room

**DR. CHANNA DE SILVA**, Chemistry & Physics, Moderator

**Preparation of Europium-based Nanomaterials with Enhanced Luminescence Properties for Biomedical Imaging**

*Research Competition Paper*  
*Presenter:* Gayanthi Attanayake  
*Sponsor:* Dr. Channa De Silva

**Plasmonic Fluorescence Enhancement of Poly(3-hexylthiophene) for Organic Solar Cell Applications**

*Presenter:* Jacklyn C. Bush  
*Sponsor:* Dr. David D. Evanoff

**Undergraduate Nutrition Students’ Attitudes Toward Obesity As Compared To Attitudes Toward Obesity By Other Undergraduate Majors**

*Presenter:* Sarah Brown  
*Sponsor:* Dr. Wayne Billon

**FINE AND PERFORMING ARTS** | UC 215 | Catamount Room

**DR. DALE CARPENTER**, School of Teaching and Learning, Moderator

**“Questioning the Canvas”**

*Research Competition Paper*  
*Presenter:* Kara L. Bender  
*Sponsor:* Dr. James K. Kirkpatrick

**Development of a Cross-Curricular Packet for Elementary Educators with a Theme on Indonesian Culture**

*Presenter:* Jennifer J. Anderson  
*Sponsor:* Dr. Joy Shea

**Analysis of Robert Muczynski’s “Desperate Measures”: Theme and Variation Procedure in Twentieth Century Composition**

*Research Competition Paper*  
*Presenter:* Rebecca Smith-Finlay  
*Sponsor:* Dr. Andrew Adams
3:30–4:45 p.m. (continued)

**SPECIAL EDUCATION** | UC 232A | Multipurpose Room A

DR. TOM OREN, School of Teaching and Learning, Moderator

**Self-Regulation by Kindergarten and 1st Grade Students with ADHD**
*Research Competition Paper*
Presenter: Megan Olmstead
Sponsor: Dr. Lisa Bloom

**Teacher Attitudes towards Gifted Students and a Gifted Education Program**
*Research Competition Paper*
Presenter: Victoria Ferguson
Sponsor: Dr. Lisa Bloom

**Self-Monitoring Using a MotivAider[R] During Independent Work Time to Increase On-task Behavior**
*Research Competition Paper*
Presenter: Lori Long
Sponsor: Dr. Lisa Bloom

**BIOLOGY** | UC 232B | Multipurpose Room B

DR. BEVERLY COLLINS, Biology, Moderator

**Characterizing the Role of CnMtw1 through the use of Conditional Mutants**
Presenter: James Ryan Simmons
Sponsor: Dr. Indrani Bose

**Seed Dispersal and Germination Ecology of Helonias bullata**
Presenter: April Punsalan
Sponsor: Dr. Laura DeWald & Dr. Beverly Collins

**Clonal Dynamics and Decline of Trembling Aspen Populus tremuloides (Michx.) in the Kaibab National Forest, Arizona**
Presenter: Groves B. Dixon
Sponsor: Dr. Laura DeWald

5–6 p.m.

**RECEPTION AND AWARDS** | UC 302 | Grand Room

Please join us for a brief reception in honor of graduate students, their mentors, and the graduate programs at Western Carolina University.

The Graduate Teaching Assistant Award, Karen Nicholson Thesis Award, North Carolina Research Award, and Research Awards in the respective disciplinary areas will be presented at this reception.

The Symposium continues at 6 p.m., so we will begin promptly at 5:00 p.m. Light refreshments and hors d’oeuvres will be available.
6–7:15 P.M.

**HISTORY & PUBLIC AFFAIRS** | UC 215 | Catamount Room
DR. ALEXANDER MACAULEY, History, Moderator

George Washington: Master of His Domain
Presenter: Evan Clapsaddle
Sponsor: Dr. Hunt Boulware

Biases in Foreclosure Rates Across the State of North Carolina
Presenter: Mindy L. Smith
Sponsor: Dr. Chris Cooper

**HEALTH** | Physical Therapy | Multipurpose Rooms A & B
DR. KAREN LUNNEN, Physical Therapy, Moderator

Effectiveness of a 12-week Evidence-Based Balance Program on Fall Risk in Community Dwelling Older Adults
Presenters: Blaire Breedlove, Alex Dowd, Megan Griffin, Ihsu Jeng, Noel Landkammer & Chad Romano
Sponsor: Dr. Lori Schrod

Fostering the PT/PTA Relationship Through Interactive Teaching: A Service Learning Project by PT Students
Presenters: Leslie Deaton, Carol Harty, Jessica Leslie & Everett Stook
Sponsor: Dr. Kathy Starr

Effects of Lower Limb Strengthening and Arch Taping on Foot Mechanics
Presenters: Andrew Dodgson, Ben Rickert, Randy Toth & Stephen Whang
Sponsor: Dr. David Hudson

Ultrasound Guided Training of the Abdominal Draw-in Maneuver During StandingLoaded Tasks in Females with Chronic Low Back Pain: A Single Subject Design
Presenters: Peggy Evans, Charles Grochowski, Deborah Haft & Michelle Martin
Sponsor: Dr. Todd Watson & Dr. Sue McPherson

Service Learning Using Evidence-Based Practice (EBP) to Evaluate the Efficacy of Body Weight Supported Treadmill Training for Patients Post Cerebrovascular Accident (CVA)
Presenters: Tiffany Knight, Kala Hildebrand, Margaret Kimble & Brandon Vanhook
Sponsor: Dr. Jessica Graning