



DARCIE YOUNT, Ph.D.

PROFESSIONAL BIOGRAPHICAL OUTLINE

BACKGROUND

Dr. Yount received her Bachelor of Science and Master of Education in Kinesiology from Auburn University, and her Doctor of Philosophy from The University of Southern Mississippi. Her doctoral research involved the study of cervical spine injuries due to head impact, and her doctoral dissertation focused on lower extremity landing mechanics in loaded plyometric training, through the use of 3-D motion analysis and force platforms. Her primary research focus is human injury biomechanics, with experience in helmet testing, as well as head & neck impact testing utilizing Federal Motor Vehicle Safety Standard (FMVSS) and National Operating Committee on Standards for Athletic Equipment (NOCSAE) standards. Dr. Yount has also participated in human cadaver dissections and has experience teaching gross human anatomy.

Previously, Dr. Yount served as a lab manager with the Kentucky Spinal Cord Injury Research Center where she managed laboratory technicians and developed equipment validation studies utilizing inertial measurement units. Dr. Yount also led the University of Pittsburgh-Naval Special Warfare Injury Prevention Initiative lab in Coronado, CA where she worked closely with United States Navy SEALs and Special Warfare Combatant-craft Crewmen (SWCC).

Dr. Yount has utilized anthropomorphic test devices (ATDs) to quantify occupant loading during both automotive and non-automotive events at ARCCA, LLC. Dr. Yount specializes in injury causation analysis and mitigation across a variety of settings, including motor vehicle accidents, slip, trip, & fall events, occupational environments, and recreational and competitive athletic events.

AREAS OF SPECIALTY

- Injury causation analysis
- Occupant kinematics
- Accident reconstruction
- Slip, trip, & fall kinematics
- Spinal biomechanics
- Head impact biomechanics
- Recreational & competitive sport biomechanics
- Human kinematics and kinetics testing and analysis
- Anthropometric test device head & neck impact testing
- Helmet impact testing

EDUCATION

- Ph.D., Kinesiology (emphasis in Biomechanics), The University of Southern Mississippi, Hattiesburg, MS, 2025
- M.Ed., Exercise Science (emphasis in Biomechanics), Auburn University, Auburn, AL, 2010
- B.S., Health and Human Performance, Auburn University, Auburn, AL, 2007

PROFESSIONAL EXPERIENCE

July 2023 – Present | ARCCA, LLC | Senior Biomechanist

- Performs injury causation analysis using knowledge of anatomy, physics, and biomechanical principles
- Investigates the relationship between accident kinematics and the human response
- Conducts vehicle and site inspections
- Specializes in occupant kinematics and kinetics, injury causation analysis, and injury mitigation analysis
- Performs research experiments involving human volunteers and anthropometric test devices to understand human response to an event, injury mechanisms, and human tolerance

Jan 2021 – June 2022 | National Biomechanics Institute | Managing Scientist

- Performed injury causation analysis using knowledge of anatomy, physics, and biomechanical principles
- Investigated the relationship between accident kinematics and the human response

2017 – 2021 | The University of Southern Mississippi | Graduate Research Assistant

- Performed helmet impacts for American football helmets utilizing NOCSAE (ND 081-14m-15, ND 001-17m17b) and NFL helmet testing standards
- Investigated cervical spine loading due to head impact using anthropometric test devices
- Investigated linear and angular head accelerations using drop tower, twin line, and linear impact testing methodologies for US Army Combat Helmets utilizing Federal Motor Vehicle Safety Standard (FMVSS) No. 218
- Performed signal processing analysis for accelerometers and angular rate sensors

2016 – 2017 | Kentucky Spinal Cord Injury Research Center, University of Louisville | Pediatric Lab Research Manager

- Managed laboratory technicians in a pediatric spinal cord injury rehabilitation setting
- Initiated validation of inertial measurement units to measure lower extremity and postural kinematics in the pediatric spinal cord injury population

2011 – 2016 | University of Pittsburgh – Naval Special Warfare Injury Prevention Initiative | Faculty Research Associate

- Liaison between University of Pittsburgh faculty and Naval Special Warfare Command
- Recruited research participants among Naval Special Warfare SEAL and Special Warfare Combatant-craft Crewman (SWCC) students and instructors for performance and injury prevention testing
- Performed physiological, strength, balance, and biomechanical testing on SEAL and SWCC students and instructors

2011 | American Sports Medicine Institute | Student Researcher

- Performed biomechanical testing using 3D motion analysis for baseball pitching and American football throwing performance analysis
- Assisted with biomechanical analysis of shoulder kinematics in female volleyball hitters

PROFESSIONAL AFFILIATIONS

- Society of Automotive Engineers, 2024-present
- American Society of Biomechanics, 2012-present
- American College of Sports Medicine, 2013-present
- Society for Neuroscience, 2016-2017

PEER-REVIEWED PUBLICATIONS & PRESENTATIONS

Yount DL, Thorsen T, Donahue PD, Gould TE. Lower Extremity Kinematics during Countermovement Jumps with Barbells and Hexagonal Bars with Increasing Submaximal Absolute Loads. *In preparation*.

Yount DL, Thorsen T, Donahue PD, Gould TE. Bar Type Changes Landing Strategies during Countermovement Jumps with Increasing Submaximal Absolute Loads. *In preparation*.

Yount DL, Jesunathadas M, Plaisted TE, York S, Edwards ED, Gould TE, Chatham LS, Piland SG. Performance of a novel football helmet technology on head impact kinematics. (2021). *Sports Engineering*, 24(1), 1-11.

Yount DL, Jesunathadas M, Edwards ED, Piland SG, Gould TE. Wearing an American football helmet increases axial loading of the neck during blunt impacts. Congress of the International Society of Biomechanics; American Society of Biomechanics; July 31-August 4, 2019; Calgary, Canada.

York S, Jesunathadas M, Edwards ED, **Yount DL**, Plaisted TA, Piland SG, Gould TE. Impact test method influences kinematic response of Hybrid III anthropometric test device. Congress of the International Society of Biomechanics; American Society of Biomechanics; July 31-August 4, 2019; Calgary, Canada.

Beals K, Haubenstricker J, Perlsweig KA, **Yount DL**, Beck C, Lovalekar M, Darnell M, Baker R, Nindl B. (2018). Energy deficiency during mountain warfare cold wear in Special Operation Forces. *International Journal of Sport Nutrition and Exercise Metabolism*. Advance online publication. doi: 10.1123/ijsnem.2018-0041.

Yount DL, York S, Edwards ED, Jesunathadas M, Gould TE, Piland SG. Efficacy of a New Football Helmet Technology on Impact Head Accelerations. American Society of Biomechanics; August 8-11, 2018; Rochester, MN.

York S, **Yount DL**, Edwards ED, Jesunathadas M, Piland SG, Gould TE. Effect of chinstrap location on American football helmet blunt impact performance. American Society of Biomechanics; August 8-11, 2018; Rochester, MN.

Perlsweig K, Mi Q, Lovalekar M, **Yount D**, Nindl B, Beals K. (2017). Heart rate variability changes in reserve SEAL operators during close quarters combat training. *Journal of Science and Medicine in Sport*, 20, S67.

Bansbach, HM, Lovalekar, MT, Abt JP, Rafferty D, **Yount D**, Sell TC. (2017). Military personnel with self-reported ankle injuries do not demonstrate deficits in dynamic postural stability or landing kinematics. *Clinical Biomechanics*. 47, 27-32.

Williams, V, Lovalekar MT, Morgan PM, **Yount DL**, Parr JJ, Abt JP, Lephart SM, Sell TC. (2017). Differences in postural stability measured with the sensory organization test among Naval Special Warfare students and Operators. *Gait and Posture*.

Beals K, Haubenstricker J, Beck C, Perlsweig KA, **Yount DL**, Lovalekar M, Darnell ME, Baker R, Sell TC. Decreased energy availability during cold weather mountain training in Special Operators. American College of Sports Medicine Annual Meeting; May 31-June 4, 2016; Boston, MA.

Yount DL, Perlsweig KA, Nagai T, Heebner NR, Sell TC, Lephart SM. Special Warfare Combat-craft Crewman Tibial Acceleration During Open Ocean Transit in Small Boats. American College of Sports Medicine Annual Meeting; May 26-30, 2015; San Diego, CA.

Lovalekar M, Abt J, Sell T, Nagai T, Haubenstricker J, Beck C, **Yount D**, Eagle S, Lephart S. Musculoskeletal injuries and associated healthcare utilization among Naval Special Warfare Sea, Air and Land Qualification Training students. 142nd Annual Meeting & Exposition of the American Public Health Association; November 15-19, 2014; New Orleans, LA.

Reeser JC, Fleisig GS, Cools AM, **Yount D**, Magnes SA. (2013). Biomechanical insights into the aetiology of infraspinatus syndrome. British Journal of Sports Medicine. 47(4): 239-244.