

# Anthony S. Kulas PhD, ATC, LAT

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## Education

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University of North Carolina at Greensboro, Greensboro, NC, Doctor of Philosophy, Exercise & Sport Science; May 2005; Dissertation Title: "Effects of Augmented Local Abdominal Activation Patterns on Lower Extremity Biomechanics During Landing in Males and Females."

Western Michigan University Kalamazoo, MI, Master of Arts, Physical Education with an Athletic Training Emphasis; April 2000

Westfield State College Westfield, MA, Bachelor of Science, Movement Science with Sports Medicine Concentration; May 1998

## Professional Positions

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### East Carolina University

2005-Present

#### Assistant Professor, Department of Health Education and Promotion

Duties include: Teaching in the undergraduate Athletic Training Education Program, Clinical supervision and advising undergraduate athletic training students, mentoring undergraduate students in research, serving on various Department and University committees, and developing and establishing a focused scholarly line of research.

### University of North Carolina at Greensboro

2002-2005

**Graduate Research Assistant** – Assisted laboratory faculty with ongoing research projects. Developed research agenda investigating abdominal contributions of core stabilization to influence lower extremity biomechanics.

**Graduate Teaching Assistant** – Primary instructor and faculty assistant to classes in Entry Level Master's Athletic Training Education Program as well as undergraduate courses in Exercise and Sport Science department.

Student representative at faculty meetings (2003). Assisted faculty in developing 2003 colloquia.

### Pro-Therapy, Gainesville, GA.

2000-2002

#### Athletic Trainer

Clinic-outreach position to two local high schools providing athletic training coverage for varsity home games. Clinically responsible for own patient load including evaluation, rehabilitation, and discharges of patients. Provided coverage for Brenau University Women's Soccer, Gainesville, GA. Outreach to local club sports including Lanier Canoe/Kayak and Gainesville Ballet Company.

**Kalamazoo Central High School (KCHS), Kalamazoo, MI**  
**Head Athletic Trainer**

1998-2000

Provided coverage for all home events and traveled with Varsity Football team. Provided for the prevention, treatment, and care for athletic injuries. Responsible for all administrative duties and maintenance of training room. Supervised and taught student athletic trainers. Communicated daily with Athletic Director, coaches, athletes, student athletic trainers, physicians, parents, and other related personnel.

**Teaching**

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**East Carolina University**

Department of Health Education and Promotion

HLTH 3280/1: Therapeutic Rehabilitation in Sports Medicine	Spring '07
HLTH 3201: Basic Principles of Rehabilitation	Spring '07
HLTH 3350: Concepts in Pharmacology	Fall '06
HLTH 4501: Clinical Hours in Athletic Training	Fall '06
HLTH 2125/6: Safety Education and First Aid	Summer '06
HLTH 4300: Field Experience in Athletic Training II	Spr. '06, '07
HLTH 2800: Medical Nomenclature for Human Performance	Spr. '06, '07, Fall '06
HLTH 3200: Field Experience in Athletic Training I	Fall '05, '06
HLTH 3250: Sports Medicine Treatment Modalities	Fall '05

Department of Exercise and Sport Science

EXSS 3850: Introduction to Biomechanics	Summer '06
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**Graduate Thesis Work**

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Zalewski P. Gender differences in trunk flexion angle and lower extremity energetics during a drop jump. Department of Exercise and Sport Science; East Carolina University.

**Mentoring Undergraduate Student Research**

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Scott S.M., Upchurch A.M., Ximines, L.A. Multiple facial fractures and return to play with a custom protective mask in a NCAA division IA basketball player. 2006. Presented at the Mid-Atlantic Athletic Trainers' Association Symposium; Virginia Beach, VA.

Calhoun D.P., Grimley B.H., Schroeder K.M. Spinal Stenosis and neurapraxia in a NCAA division IA football player. 2006. Presented at the Mid-Atlantic Athletic Trainers' Association Symposium; Virginia Beach, VA.

**Manuscripts in Preparation**

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**Kulas A.S.**, Zalewski P., Hortobagyi T., DeVita P. Added trunk load selectively changes lower extremity biomechanics depending on trunk flexion position.

**Manuscripts in Review**

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Schmitz R.J., **Kulas A.S.**, Perrin D.H., Riemann B.L., Shultz S.J. Sex differences in lower extremity biomechanics during single leg landings. *Clinical Biomechanics*.

**Publications**

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**Kulas A.S.**, Schmitz R.J., Shultz S.J., Henning J.M., & Perrin D.H. Sex-specific abdominal activation strategies in landing. *Journal of Athletic Training*. In Press.

**Kulas A.S.**, Negotiating your first-professional position. *Athletic Therapy Today*. 2006; 11(6): 18-21.

**Kulas A.S.**, Schmitz R.J., Shultz S.J., & Perrin D.H., & Watson M.A. Energy Absorption as a Predictor of Leg Impedance in Highly Trained Females. *Journal of Applied Biomechanics*. 2006; 22(3): 177-185.

Shultz S.J., Nguyen A.D., Windley T.C., **Kulas A.S.**, Botic T.L., & Beynnon B.D. Intratester and Intertester Reliability of Clinical Measures of Lower Extremity Anatomical Characteristics: Implications for Multi-center Studies. *Clinical Journal of Sports Medicine*. 2006; 16(2): 155-160.

**Kulas A.S.**, Windley T.C., & Schmitz R.J. Effects of Abdominal Postures on Lower Extremity Energetics During Single Leg Landings. *Journal of Sport Rehabilitation*. 2005; 14(1): 58-71.

Shultz S.J., Windley T.C., **Kulas A.S.**, Schmitz R.J., Valovich McLeod T.C., Perrin D.H. Low Levels of Anterior Tibial Loading Enhance Knee Extensor Reflex Response Characteristics. *Journal of Electromyography and Kinesiology*. 2005; 15(1): 61-71.

Schmitz R.J., Shultz S.J., **Kulas A.S.**, Windley T.C., & Perrin D.H. Kinematic Analysis of Lower Body Perturbations. *Clinical Biomechanics*. 2004; 19(10):1032-1039.

### **Peer-Reviewed Abstracts**

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**Kulas A.S.**, Schmitz R.J., Shultz S.J., Henning J.M., Perrin D.H. Sex Differences in Trunk-Pelvis Angle but Not Hip Angle in Landing. *Journal of Athletic Training*. 2006; 41(2): S-14.

Schmitz R.J., **Kulas A.S.**, Perrin D.H., Riemann B.L., Shultz S.J. Sex Differences in Lower Extremity Energetics during Single Leg Landings. 3<sup>rd</sup> ACL Research Retreat, April 2006; Lexington, KY.

**Kulas A.S.**, Schmitz R.J., Ulm M., Shultz S.J., and Perrin D.H. Validation of Abdominal Hollowing in Standing vs. 4-Point Kneeling and Prone Positions. *Medicine and Science in Sports and Exercise*. 2005. 36(5); S120.

Martin N.M.G., **Kulas A.S.**, Schmitz R.J. Asymmetrical Landing Forces In Female Dancers. *Journal of Athletic Training*. 2005; 40(2): S-57.

Shultz S.J., Ambegaonkar J.P., Botic T.L., **Kulas A.S.**, Nguyen A., Shimokochi Y., Windley T.C. Intratester and Intertester Reliability of Clinical Measures of Lower Extremity Anatomical Alignment. *Journal of Athletic Training*. 2005; 40(2): S-109.

**Kulas A.S.**, Windley T.C., Schmitz R.J., Perrin D.H., Shultz S.J. Sex Differences in Neuromuscular Responses to Knee Extension Perturbations as Evidenced by Reflex Timing, Amplitude and Knee Extension Moments. *Journal of Athletic Training*. 2004; 39(2): S-16.

**Kulas A.S.**, Schmitz R.J., Windley T.C., Shultz S.J., Perrin D.H. Pilot Investigation: Sex specific effects of abdominal maneuvers on lower extremity energetics during landings. *Medicine and Science in Sports and Exercise*. 2004; 36(5):S230.

Windley T.C., **Kulas A.S.**, Shultz S.J., Perrin D.H., Schmitz R.J. Navicular Drop Predicts Transverse Plane Knee Moments in a Single-Leg Weight-Bearing Perturbation. *Journal of Athletic Training*. 2004; 39(2):S30.

Schmitz R.J., Shultz S.J., **Kulas A.S.**, Windley T.C., Perrin D.H. Between-Day 3D Kinematic Measurement Consistency during Lower Extremity Perturbations. *Journal of Athletic Training*. 2004; 39(2):S116.

Shultz S.J., Windley T.C., **Kulas A.S.**, Schmitz R.J., Valovich- McLeod T.C., Perrin D.H. Within and Between Test Measurement Consistency Obtained From a Custom Reflex Testing Device. *Journal of Athletic Training*. 2004; 39(2):S116.

Windley T.C., **Kulas A.S.**, Schmitz R.J., Perrin D.H., Shultz S.J.. Tibiofemoral Angle, Not Q-angle, is Related to Frontal Plane Lower Extremity Kinematics During a Weight-Bearing Perturbation. *Medicine and Science in Sports and Exercise*. 2004; 36(5):S345-6.

### **Other Published Works**

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Shultz S.J., Valovich T.C., Zinder S.M and **Kulas A.S.** Sports Medicine Handbook. 3<sup>rd</sup> Edition. National Federation of State High School Associations: Indianapolis, IN.

Perrin D.H. Athletic Taping and Bracing. 2<sup>nd</sup> Edition. 2005. Human Kinetics; Champaign, Ill. Role: Model

### **Grants**

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Sex Differences in Abdominal Muscle Activation and Trunk Motion During Landing. Funding Agency: *ECU Creative/Research and Activity Grant 2006*. Role: Principal Investigator. Submitted: September 2005. Funding: not-funded.

Sex-Specific Adaptability of Trunk Muscle Recruitment and Trunk Control during Single-Leg Landing. Funding Agency: *National Athletic Trainers' Association Research and Education Foundation*. Role: Principal Investigator. Preproposal submitted November 2005, invited for full proposal submission. Full Proposal submitted: February, 15<sup>th</sup> 2006; not-funded.

"Effects of the Abdominal Hollowing Maneuver on Lower Extremity Biomechanics during Drop Landings" 2004 - Not funded. Principal Investigator: **Kulas A.S.** Support Personnel. Schmitz R.J., Shultz S.J.

Agency: National Athletic Trainers' Association Research & Education Foundation (Doctoral Dissertation Grant).

Aim: to assess the influence of a clinically based abdominal contraction that focuses on the Transversus abdominis on the lower extremity energetics during a double leg landing.

"Kinematic Analysis of Functional Knee Stability Following a Lower Extremity Perturbation" 2003-05. Co-Principal Investigators: Shultz S.J. and Schmitz R.J.; Role: **Research Assistant** Agency: Faculty Grant, University of North Carolina at Greensboro.

Aim: to quantify and establish the reliability of kinematic and kinetic measures at the knee, hip and ankle joints in response to a functional, weight bearing perturbation.

## **Grants continued**

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"Health and Safety Issues in High School Athletics"

Project Coordinator: Shultz S.J.; Role: **Research Assistant**

Agency: National Federation of State High School Athletic Associations

Aim: Phase III continuation of previously funded project to develop the 3rd edition of the National Federation of State High School Association's Sports Medicine Handbook.

"Effect of Knee Joint Displacement and Load on Neuromuscular Reflex Behavior: A Reliability and Validity Study" 2002-03

Principal Investigator: Shultz S.J.; Role: **Research Assistant**

Agency: New Faculty Grant, University of North Carolina at Greensboro.

Aim: To evaluate the feasibility and reliability of a new device to assess the effect of knee joint displacement and load on neuromuscular reflex sensitivity.

"Gender, Sex Specific Hormones and Anterior Cruciate Ligament Compliance" 2000-04

Co-Principal Investigators: Perrin D.H. and Shultz S.J.; Role: **Research Assistant** (2002-03)

Agency: National Institutes of Health (1 RO3 AR47178-01)

Aim: To examine the influence of gender and sex specific hormones on passive ligament behavior across one complete menstrual cycle, and serve as pilot data for submission of an R01 proposal.

## **Invited Professional Presentations**

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*56<sup>th</sup> NATA Annual Meeting & Clinical Symposia – Indianapolis, NC* June 2005  
*Integrated Core and Lower Extremity Function*

*4<sup>th</sup> Annual Sports Medicine Symposium – Asheboro, NC* August 2004  
*Core Strengthening Exercises*

*3<sup>rd</sup> Annual Sports Medicine Symposium – Asheboro, NC* August 2003  
*Weight Training: Middle School vs. High School*

## **Service**

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### **East Carolina University**

Department of Health Education and Promotion

Planning Master of Science in Athletic Training degree program 2005-Present

Strategic Planning Committee 2005-Present

Commencement Committee 2005-2006

University Service

Undergraduate Research Committee 2005-Present

### **Community**

Presentation to: Coastal Plain Football Coaches Association August 2005  
*Prevention and Care of Musculoskeletal and Heat-Related Injuries*

## **Service cont'd**

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### **Professional**

#### **Manuscript Reviewer:**

Journal of Athletic Training	2005 - Present
Journal of Applied Biomechanics	2006 - Present
Research in Sports Medicine: and international journal	2006 - Present

#### **Book Reviewer:**

Shultz, S.J., Houglum, P.A. & Perrin, D.H.. Examination of Musculoskeletal Injuries.  
2005. 2nd Edition. Human Kinetics: Champaign, IL.

## **Awards & Honors**

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### **Professional**

Nominee - 2007 Doctoral Dissertation Award. Organization - National Athletic Trainers' Association Research and Education Foundation

#### **University of North Carolina at Greensboro**

Susan Stout Graduate Student Research Fellowship Award	Fall 2003
Summer Research Assistantship Award	Summer 2003

## **Certifications & Professional Affiliations**

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NATA-BOC Certified Athletic Trainer, #069802676	1998-Present
Licensed in North Carolina, #0767	2002-Present
Community First Aid & Safety	1996-Present
CPR/AED for the Professional Rescuer	1996-Present
National Athletic Trainers' Association, member #963321	1996-Present
Mid-Atlantic Athletic Trainers' Association - District 3	2002-Present