

## ***Sandra Janine Shultz PhD, ATC, CSCS, FNATA, FACSM***

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### **EDUCATION**

<b>University of Virginia</b>	<b>May 1999</b>
<i>Doctor of Philosophy: Sports Medicine</i>	
<i>Dissertation Title: Neuromuscular Response Characteristics in Males and Females Following Knee Perturbation</i>	
<b>University of Arizona</b>	<b>July 1985</b>
<i>Master of Science: Exercise and Sport Sciences</i>	
<b>California State University, Fullerton</b>	<b>January 1984</b>
<i>Bachelor of Science: Physical Education; Athletic Training Emphasis</i>	

### **CERTIFICATIONS & LICENSURE**

<b>Certified Athletic Trainer</b>	<b>1984 - Present</b>
<i>National Athletic Trainers' Association - Certification # 08-462</i>	
<i>Commonwealth of Virginia, Board of Medicine - Certification # 0126000035</i>	
<i>North Carolina Board of Athletic Trainer Examiners – License #0914</i>	
<b>Certified Strength and Conditioning Specialist</b>	<b>1989 - Present</b>
<i>National Strength and Conditioning Association - Certification # 89329</i>	
<i>June 1989</i>	

### **PROFESSIONAL POSITIONS**

<b>University of North Carolina at Greensboro – Department of Kinesiology</b>	<b>August 2002 - Present</b>
<i>Professor (2011-Present); Associate Professor (2005-2011); Assistant Professor (2002-2005)</i>	
<i>Department Chair (April 2012-2017)</i>	
<i>Director of Graduate Study, Department of Exercise and Sport Science (2005-2011)</i>	
<i>Director, Entry Level Master's Degree Program in Athletic Training (2002-2004)</i>	
<i>Co-Director, Applied Neuromechanics Research Laboratory (2002-Present)</i>	
Tenure track faculty appointment participating in research endeavors and academic programs in the Athletic Training and Applied Neuromechanics specializations. Responsibilities include: classroom instruction at the graduate level in qualified areas; advising and mentoring of graduate students on research projects and program of study by chairing and serving on master's theses, doctoral program and dissertation committees; assist in direction and supervision of the Applied Neuromechanics Research Laboratory; and pursuing external funding and collaboration with other faculty members to support both individual and laboratory research agendas. Filled a variety of administrative roles that are described under service.	
<b>University of North Carolina at Chapel Hill</b>	<b>September 2003 – Present</b>
<i>Adjunct Assistant Professor</i>	
<i>Participating on master's thesis and doctoral dissertation committees in the Sports Medicine and Athletic Training specialization.</i>	
<b>University of Virginia</b>	<b>June 1998 – 2003</b>
<i>Adjunct Assistant Professor</i>	
<i>Adjunct faculty appointment to complete ongoing academic advising and research endeavors in the Sports Medicine and Athletic Training Specialization.</i>	
<i>July 2002 – August 2003</i>	

***Assistant Professor***

*June 2000 – July 2002*

***Interim Coordinator, Graduate Programs in Athletic Training and Sports Medicine***

*July 2001 – July 2002*

***Director, Strength and Balance Laboratory, General Clinical Research Center***

*September 2001 – July 2002*

Faculty appointment participating in research endeavors and academic programs in the Sports Medicine and Athletic Training Specialization. Responsibilities included: coordinator of NATA Accredited Graduate Program in Athletic Training (2001-02); classroom instruction at both graduate and undergraduate levels in qualified areas; advising and mentoring graduate students on research projects and program of study by chairing and serving on master's theses, doctoral program and dissertation committees; direction and supervision of the Sports Medicine and Athletic Training Research Laboratory; and pursuing external funding and collaboration with other faculty members to support both individual and sports medicine laboratory research agendas.

***Research Associate***

*June 1999 - June 2000*

Responsibilities included teaching graduate and undergraduate courses in the Sports Medicine and Athletic Training program areas, serving on doctoral dissertation and master's thesis committees, grant writing, daily operation and maintenance of the Sports Medicine / Athletic Training Research Laboratory, and assisting with on going research projects.

***Graduate Research Assistant***

*June 1998 - May 1999*

Responsible for daily operation and maintenance of the Sports Medicine / Athletic Training Research Laboratory. Assist faculty members, doctoral and master's students with on going research projects.

**Blue Ridge School, Virginia**

**August 1996 - June 1998**

***Head Athletic Trainer***

Responsible for care, prevention, treatment and rehabilitation of athletic injuries for all athletic teams. Consulting with coaches on sport specific conditioning programs. Responsible for budget and ordering.

**University of California, Los Angeles**

**September 1991 - September 1996**

***Associate Director of Athletic Training and Rehabilitative Services***

***Head Athletic Trainer: Women's Intercollegiate Athletics***

Responsible for coordinating medical care for NCAA Division I women's intercollegiate athletic teams including pre-season screening, prevention, treatment and rehabilitation. Primary Coverage of Women's Basketball, Volleyball, Softball and M & W Cross Country. Assisted with Football. Director UCLA Student Athletic Training Internship Program. Other administrative responsibilities included staff scheduling, budget and ordering, coordination of NCAA regional and national tournaments and championship events.

**TRACC Sports Medicine, Inc.**

**July 1985 - September 1991**

***Assistant Director***

A combined physical therapy and conditioning center. Experienced in working with physical therapy patients, general population, recreational athletes, junior national athletes, elite and professional athletes. Responsible for consultation and development of rehabilitation, conditioning and sport specific training programs for clients of all ages. Provided treatment to aid in injury rehabilitation to physical therapy clients. Provided athletic training services and coverage for sponsored and contracted athletic events. Administrative responsibilities included direction and scheduling of staff, specialty programs administration, facility promotions, equipment ordering and maintenance, development of staff policies and procedures.

**SCHOLARSHIP****Grants and Contracts Awarded**

- UNCG Giant Steps Seed Grant** **2018-2019**  
 “Tr-Axial Knee Laxity Measurement Solutions”  
 Principal Investigator (\$25,000)  
*Aim:* To leverage 20 years of laboratory experience in the measurement of tri-planar knee laxity to develop a cost-effective and clinically assessable device to measure knee laxity in 3 planes of motion with limited training and set-up. The objective of this proposal is to solve two mechanical measurement solutions in preparation for prototype development.
- UNCG Giant Steps Seed Grant** **2018-2019**  
 “Health Girls Initiative”  
 Co- Investigator (\$25,000) (Calkins S and Wideman L, Co-PIs)  
*Aim:* To plan and submit an inter-disciplinary longitudinal study of health risks in adolescent girls in Guilford County. The project engages a well-funded team of investigators from 7 different disciplines on campus to address biological, psychological and social processes in a single cohort.
- National Science Foundation I-Corps™ Program** **Fall 2017**  
 SJ Shultz; Team Principal Investigator (Entrepreneurial Leads; Elvis Foli and James Coppock – Industry Sponsor/Advisor; Robert Koshinski); \$3,000-\$5,000.  
 Aim: To move forward commercialization of a knee laxity device.  
 I-Corps™ Program - UNCG + NCAT were awarded a 5-year, \$500,000 NSF grant to become established as an I-Corps Site (October 2017-2022). The NSF Innovation Corps (I-Corps™) helps prepare scientists and engineers to extend their focus beyond the university laboratory, and accelerates the transition of basic-research towards commercialization. The Program features a 5-week Short-Course that trains research teams on Lean LaunchPad methodology. Teams consist of a student Entrepreneur Lead (EL), faculty Primary Investigator (PI) and Industry Sponsor. Each team receives “mini-grants” up to \$10,000 to fund their customer discovery process, prototyping, and other seed expenses the team.
- UNCG Strategic Plan Seed Grant** **January 2017 – June 2018**  
 “LEAP Forward: Common Goals and Common Measures”  
 Co-Principal Investigator with Emily Janke (\$25,000)  
*Aim:* to work with community agencies to advance a common agenda with common goals and common measures so that the community, including UNCG faculty, staff and students, can more closely align their programs, policies, research and educational activities to have the greatest collective impact on health outcomes associated with lifetime eating and physical activity practices in our community
- UNCG Regular Faculty Grant** **January 2017 – June 2018**  
 “The Effect of Exercise and Ligament Quality on Knee Laxity Variability Across the Menstrual Cycle”  
 Co-Principal Investigator with RJ Schmitz and LWideman, \$8,500.  
*Aim:* To examine the magnitude of knee laxity changes in response to exercise and determine if they are correlated with knee laxity changes across the menstrual cycle and the quality of the ligament as determined by MRI.
- Department of Kinesiology Faculty Summer Pilot Grants** **May 2015 – December 2016**  
 “Associations between Relaxin and Knee Laxity Profiles in Eumenorrhic Women”  
 Principal Investigator (L. Wideman, Co-Principal Investigator), \$5,000
- UNCG HHS Research Excellence Grant** **July 2015-Dec 2016**  
 “Associations between Relaxin and Knee Laxity Profiles in Eumenorrhic Women”  
 S.J. Shultz; Co-Principal Investigator with Laurie Wideman  
*Aim:* To examine the extent to which relaxin levels are associated with ABS<sub>LAX</sub> and CYC<sub>LAX</sub> in physically active eumenorrhic women, after controlling for sex hormone levels; and to better characterize through serial measures the individual variability in serum relaxin profiles in active, eumenorrhic females.  
 University of North Carolina at Greensboro \$5,000
- NIH - National Institute of Arthritis and Musculoskeletal and Skin Diseases (R01 AR050421)** **2007-2013**  
 “A Case-Control Study of ACL Injury Risk Factors” (Consultant)  
 S.J. Shultz; Consultant

University of Vermont (B.D. Beynon, Principal Investigator), 1,480,000

**UNCG Regular Faculty Grant**

**Jan 2012– June 2013**

“The effect of long term strengthening on frontal plane knee laxity in older adults with osteoarthritis”

S.J. Shultz; Principal Investigator

Aim: To compare the effects of high-intensity strength training, low-intensity strength training, and attention control on frontal plane knee joint laxity.

**UNCG Summer Excellence Research Award**

**Summer 2012**

“The effect of long term strengthening on frontal plane knee laxity in older adults with osteoarthritis”

S.J. Shultz; Principal Investigator

Aim: Using the project stated, develop experience in clinical trials research through collaborations with Dr. Steve Messier and Dr. Paul Devita. The ultimate goal is to build expertise and pilot data towards a future clinical trial research grant submission.

**UNCG School of HHP Office of Research**

**Summer 2011**

**Summer Scholarship Award**

S.J. Shultz; Principal Investigator

Aim: To develop a manuscript on the relationships between serum sex hormones, serum collagen markers and anterior knee joint laxity.

**NFL Charities Grant**

**2010-2011**

“The Effects of Exercise Induced Increases in Knee Laxity on Knee Joint Biomechanics”

S.J. Shultz; Principal Investigator (10% Effort); University of North Carolina at Greensboro; \$125,000

Aim: To characterize the effects of exercise induced increases in knee laxity on weight bearing knee biomechanics via serial measures before, during and following a prolonged, intermittent exercise protocol that simulates a soccer match.

**Samara Innovations, Inc**

**2010-2011**

“Performance and Biomechanical Testing of a Specialized Compression Short”

S.J. Shultz; Principal Investigator; \$55,750 (Fee or Service Contract)

Aim: To compare a specialized compression short to a standard compression short on functional performance (sprint speed, jump height and distance, balance) and 3-D joint biomechanics during a drop jump and single leg squat.

**NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases (3R01AR053172-03S1)**

**2009-2010**

Administrative Supplement “Sex Hormone Mediated Knee Laxity and Knee Stability”

S.J. Shultz; Principal Investigator (10% Effort); \$105,000

Aim: To identify through advance statistical methods individual laxity profiles and individual landing and lower extremity perturbation profiles (joint motions and forces) and determine the laxity profile(s) that are most predictive of at risk knee biomechanical profiles.

**NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases (ROI-AR053172)**

**2006-2010**

“Sex Hormone Mediated Knee Laxity and Knee Stability”

S.J. Shultz; Principal Investigator (50% Effort)

University of North Carolina at Greensboro \$1,037,210

**UNCG Safrin Award**

**2008 - 2009**

“Changes in Serum Collagen Marker Levels Across the Menstrual Cycle”

Co-Principal Investigator with L.Wideman, University of North Carolina at Greensboro. \$3,000

**NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases (3R01AR053172 - 01A1W1)**

**2007**

“Sex Hormone Mediated Knee Laxity and Knee Stability”; Minority Supplement to Promote Diversity in Health Related Research (Michael Leonard-Garner, Undergraduate Student)

S.J. Shultz; Principal Investigator (50% Effort)

University of North Carolina at Greensboro \$15,337

**UNCG Regular Faculty Grant**

**2007 - 2008**

“Changes in Serum Collagen Marker Levels Across the Menstrual Cycle”

Co-Principal Investigator with L.Wideman, University of North Carolina at Greensboro. \$5,000

<b>Faculty Grant</b>	<b>2005-2006</b>
“Pilot Data for a Prospective Study of ACL Injury Risk Factors During Skeletal Maturation”	
S.J. Shultz; Co-Principal Investigator with RJ Schmitz, University of North Carolina at Greensboro. \$10,000	
<b>NATA Ethnic Diversity Advisory Council</b>	<b>2005-2006</b>
“Summer Research Assistantships for Ethnically Diverse Undergraduate Students”	
Co-Principal Investigator with AD Nguyen; University of North Carolina at Greensboro. \$7,000.00	
<b>National Federation of State High School Athletics Associations</b>	<b>2004-2005</b>
“Health and Safety Issues in High School Athletics”	
Project Coordinator, University of North Carolina at Greensboro	
Phase III continuation of previously funded project to develop the 3 <sup>rd</sup> edition of the National Federation of State High School Association's Sports Medicine Handbook. \$9,994.00	
<b>Warner / Fermaturo and KCOM Board of Trustees</b>	<b>2003-2005</b>
“Gender Differences in Neuromuscular Response Characteristics Between Prepubescent Boys and Girls Following a Knee Perturbation”. <u>SJ Shultz; Consultant</u>	
Principal Investigator: Tamara C. Valovich, Arizona School of Health Sciences. \$3,985.	
<b>Faculty Grant</b>	<b>2003-2005</b>
“Kinematic Analysis of Functional Knee Stability Following a Lower Extremity Perturbation”	
S.J. Shultz; Co-Principal Investigator with RJ Schmitz, University of North Carolina at Greensboro. \$11,550	
<b>New Faculty Grant</b>	<b>2002- 2003</b>
“Effect of Knee Joint Displacement and Load on Neuromuscular Reflex Behavior: A Reliability and Validity Study”	
<u>Principal Investigator</u> , University of North Carolina at Greensboro. \$5,000	
<b>National Institutes of Health - General Clinical Research Center Grant # MO1 RR 00847-28</b>	<b>2001 - 2002</b>
The major goal of this project is to make available to medical scientists the resources that are necessary for the conduct of clinical research.	
S.J. Shultz; Director, Strength & Balance Laboratory (15% Effort), University of Virginia	
(Principal Investigator: Robert M. Carey). \$3,850,701 (Direct)	
<b>NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases (R03-AR47178)</b>	<b>2000 - 2004</b>
“Gender, Sex Specific Hormones and Anterior Cruciate Ligament Compliance”	
S.J. Shultz; Co-Principal Investigator and Project Coordinator (25% Effort)	
University of Virginia (Years 1&2), University of North Carolina at Greensboro (Year 3; no cost extension Year 4)	
(Principal Investigator; David H. Perrin). \$222,000	
<b>National Federation of State High School Associations</b>	<b>2000 - 2002</b>
Phase II continuation of previously funded project to develop a National Federation of State High School Association's Sports Medicine Handbook.	
S.J. Shultz; Principal Investigator (5% Effort), University of Virginia. \$12,548.39	
<b>Summer Grant Writing Award</b>	<b>Summer 2001</b>
Internal award to prepare a research grant proposal to investigate the effects of knee joint displacement and load on neuromuscular reflex behavior (Incorporated into R01 Proposal).	
S.J. Shultz; <u>Principal Investigator</u> , University of Virginia. \$5,000.00	
<b>Summer Grant Writing Award</b>	<b>Summer 2000</b>
Internal award to prepare a research grant proposal to compare neuromuscular response strategies, kinematics and ground contact forces in males and females during functional perturbations and landing maneuvers. (Incorporated into R01 Proposal)	
S.J. Shultz; <u>Principal Investigator</u> , University of Virginia. \$5,000.00	
<b>National Athletic Trainers’ Association Research and Education Foundation</b>	<b>2000 – 2003</b>
“Effect of Lower Extremity Limb Alignment on Neuromuscular Activation Patterns”	
S.J. Shultz; Co-Principal Investigator with David H. Perrin; University of Virginia. \$35, 207.00	
<b>National Federation of State High School Associations</b>	<b>1999 – 2000</b>
Collection and Analysis of Information on Current Sports Medicine Issues for	

Development of a National Association Sports Medicine Handbook.  
S.J. Shultz; Principal Investigator, University of Virginia. \$12,940.00

***National Athletic Trainers' Association Research and Education Foundation*** **1997 - 1999**  
 "Neuromuscular Response Characteristics in Males and Females Following Knee Perturbation."  
S.J. Shultz; Co-Principal Investigator with David H. Perrin PhD, ATC; University of Virginia. \$18,811.00

***Far West Athletic Trainers' Association*** **1997 - 1998**  
 "Reliability and Validity of a Functional Perturbation Device to Assess Neuromuscular Response Characteristics." S.J. Shultz; Principal Investigator, University of Virginia. \$750.00

### **Student Grants Awarded as Faculty Advisor**

***National Athletic Trainers' Association Research and Education Foundation*** **2016– 2017**  
 Doctoral Research Grant: "The influence of hip structure and gluteal activation on dynamic knee valgus"  
 Jennifer Hogg, Principal Investigator; University of North Carolina at Greensboro, \$2,500

***American Society for Biomechanics*** **2015-2016**  
 Doctoral Research Grant: "Relationship between Hamstring Musculo-articular Stiffness and Anterior Cruciate Ligament Loading during Functional Unilateral and Bilateral Landing Tasks"  
 Justin Waxman, Principal Investigator; University of North Carolina at Greensboro, \$2,000

***National Athletic Trainers' Association Research and Education Foundation*** **2013– 2014**  
 Doctoral Research Grant: "Comparison of Neuromuscular Control Strategies between Female Dancers and Athletes"  
 Michele Pye, Principal Investigator; University of North Carolina at Greensboro, \$2,500

***National Athletic Trainers' Association Research and Education Foundation*** **2012 – 2013**  
 Doctoral Research Grant: "Associations between Physical Characteristics and Landing Biomechanics in Adolescent Females"  
 Amanda Tritsch, Principal Investigator; University of North Carolina at Greensboro, \$2,500

***University of North Carolina Greensboro Summer Research Assistantship*** **2011**  
 "Postural Balance Differences Between Dancers and Athletes"  
 Summer Research Assistantship Awarded to Michele Pye; \$2,000

***University of North Carolina Greensboro Summer Research Assistantship*** **2011**  
 "Timing of Energy Absorption Strategies During a Drop Jump"  
 Summer Research Assistantship Awarded to Amanda Tritsch; \$2,000

***University of North Carolina Greensboro Undergraduate Research Assistant*** **2010– 2011**  
 "Genetic Associations with Knee Joint Laxity" (Co-Faculty Advisor with Vincent Henrich)  
 Interdisciplinary Undergraduate Research Assistant: Richard Bell, \$3,000

***National Athletic Trainers' Association Research and Education Foundation*** **2010 – 2011**  
 Doctoral Research Grant: "The Effect of Relative Lean Body Mass and Strength on Hip, Knee, and Ankle Energy Absorption During Landing"  
 Melissa Montgomery, Principal Investigator; University of North Carolina at Greensboro, \$2,500

***University of North Carolina Greensboro Summer Research Assistantship*** **2010**  
 "Effect of strength and body composition on changes in biomechanics during a soccer match simulation"  
 Summer Research Assistantship Awarded to Amanda Tritsch; \$2,000

***University of North Carolina Greensboro Undergraduate Research Assistant*** **2009– 2010**  
 "The Independent and Interactive Effects of Estrogen, Tension and Heat on Gene Expression in Collagen Fibroblasts" (Co-Faculty Advisor with Vincent Henrich)  
 Interdisciplinary Undergraduate Research Assistant: Richard Bell, \$3,000

***University of North Carolina Greensboro Undergraduate Research Assistant*** **2008– 2009**  
 "The effect of Lean Muscle Mass and Strength to Body Weight Measures on Quadriceps Activation Amplitudes During a Drop Jump Landing"  
 Undergraduate Research Assistant: Megan Christiansen, \$2,000

***National Athletic Trainers' Association Research and Education Foundation*** **2006 – 2007**  
 Doctoral Research Grant: "Relationships Between Lower Extremity Posture and Lower Extremity Kinematics with Posterior Lateral Hip Activation During A Single Leg Squat"  
 AD Nguyen, Principal Investigator; University of North Carolina at Greensboro, \$2,500

<b>University of North Carolina Greensboro Undergraduate Research Assistant</b> “The Effect of Dance Training and General Joint Laxity” Undergraduate Research Assistant: Erin Laurie, \$2,000	<b>2006 – 2007</b>
<b>University of North Carolina Greensboro Undergraduate Research Assistant</b> “The Relationship Between Lower Extremity Alignment and Dynamic Knee Valgus During Drop Jump Landings” Undergraduate Research Assistant: Katherine LeMyre, \$2,000	<b>2006 – 2007</b>
<b>National Athletic Trainers’ Association Research and Education Foundation</b> Doctoral Research Grant: “The effect of tibialis anterior fatigue on the tibial internal rotation and eversion during heel-toe landing” Y Shimokochi, Principal Investigator; University of North Carolina at Greensboro, \$2,500	<b>2005 – 2006</b>
<b>National Athletic Trainers’ Association Research and Education Foundation</b> Doctoral Research Grant: “Comparison of Muscle Activation and Knee Joint Stiffness in Female Dancers and Basketball Players During Drop Jumps Landings” JP Ambegoankar, Principal Investigator; University of North Carolina at Greensboro, \$2,500	<b>2005 – 2006</b>
<b>University of North Carolina Greensboro Undergraduate Research Assistant</b> “The Prevalence of General Joint Laxity in a Division I Athletic Population” Undergraduate Research Assistant: Erin Laurie, \$1,500	<b>2005 – 2006</b>

### Grants Submitted / Pending

<b>North Carolina Biotechnology Center - Biotechnology Innovation Grant</b> “Early Prototype Development and Optimization of a Clinical Knee Arthrometer” Principal Investigator, \$100,000 (Pending) <u>Aim:</u> to build a Phase I prototype of an automated, clinical knee joint arthrometer to accurately and consistently measure knee laxity in 3 planes of motion in less than five minutes with minimal training	<b>Submitted February 2018</b>
<b>National Athletic Trainers’ Association Research and Education Foundation</b> “Associations between Relaxin and Knee Laxity Profiles in Eumenorrhic Women” <u>Principal Investigator</u> (L. Wideman, Co-Principal Investigator), \$57,000 – Not Funded	<b>Submitted February 2015</b>
<b>NIH - National Institute of Arthritis and Musculoskeletal and Skin Diseases (R15 AR068001)</b> Submitted October 2015 “Biomechanical Factors in Knee Cartilage Health” <u>Co-Investigator</u> (R.J. Schmitz, Principal Investigator), \$300,000 <u>Aim:</u> To determine how local biomechanical factors that have individually been related to OA development/progression (multiplanar knee laxity, anatomical alignment, knee extensor strength, and gait biomechanics) combine and interact to compromise extracellular content/health of the knee cartilage in a population known to be at high risk of OA development, but not yet diagnostic for OA	<b>Submitted October, 2013</b>
<b>NATA Vision Quest Work Group</b> New Proposal “Clinical Outcomes and Cost Containment of an Athletic Trainer Administered Intervention for Reducing Fall Risk Factors and Fall Incidents” <u>Co- Investigator</u> , (Principal Investigators: SE Ross and CK Rhea) \$253,000 (RFP was recalled after resubmission)	<b>Submitted June, 2013</b>
<b>NIH – National Institute of Child Health and Human Development (R15)</b> Revised Proposal “Enhancing Functional Mobility after ACL Reconstruction” R15 HD076299-01 <u>Co-Investigator</u> (PI: CK Rhea). 3 years, \$430,500 (Not Funded)	<b>Submitted October, 2012</b>
<b>NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases (R01)</b> New Proposal “Collagen-Related Genetic Pathways to ACL Injury Risk” R01AR064722-01 <u>Co-Principal Investigator with VC Henrich</u> , University of North Carolina at Greensboro. (Not Discussed)	<b>Submitted June 2012</b>
<b>NIH – National Institute of Child Health and Human Development (R15)</b> New Proposal – “Enhancing Functional Mobility after ACL Reconstruction” R15 HD076299-01 <u>Co-Investigator</u> (PI: CK Rhea). 3 years, \$430,500 (Not Discussed)	<b>Submitted October, 2011</b>
<b>NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases (R01)</b> New Proposal “Knee Joint Laxity: A Complex Phenotype Indicative of ACL Injury Risk” <u>Co-Principal Investigator with VC Henrich</u> , University of North Carolina at Greensboro. (Not Funded)	

- NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases (RO1)** **Submitted March, 2011**  
Competitive Renewal for RO1-AR053172 “Hormone mediate-knee laxity and knee stability  
Co-Principal Investigator, University of North Carolina at Greensboro; Scored (63, 53%; not funded).
- NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases (RO1)** **Submitted October, 2010**  
“Precipitation Factors for High Risk Knee Joint Biomechanics: A Longitudinal Growth Modeling Study”  
Principal Investigator, University of North Carolina at Greensboro: Not Funded
- NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases (RO1)** **Submitted June, 2008**  
“Maturational and Sex Specific Orthopedic Injury Risk Factors in Youth Soccer”  
Co-Principal Investigator, University of North Carolina at Greensboro (Principal Investigator; RJ Schmitz) Not Funded
- Centers for Disease Control** **Submitted February, 2007**  
“Risk Factor Detection, Targeted Prevention and Injury Reduction in Youth Soccer”  
Co-Principal Investigator with RJ Schmitz, University of North Carolina at Greensboro: Scored, not funded
- National Athletic Trainers’ Association Research and Education Foundation** **Submitted September, 2005**  
“Neuromuscular and Biomechanical Consequences of Anterior Knee Joint Laxity”  
Principal Investigator, University of North Carolina at Greensboro: Not Funded
- NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases (RO1)** **Submitted February, 2005**  
“Hormone-Mediated Knee Joint Laxity and Neuromechanics”  
Principal Investigator, University of North Carolina at Greensboro (Score 175, percentile 17%, Approved for Funding)
- NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases (RO1)** **Submitted March, 2004**  
“A Case-Control Study of ACL Injury Risk Factors”  
Co-Principal Investigator, University of North Carolina at Greensboro (Principal Investigator; BD Beynon)  
Resubmitted February, 2006 – (Score 180)
- NIH – National Institute of Arthritis and Musculoskeletal and Skin Diseases (RO1)** **Submitted October, 1999**  
“Gender and Hormonal Factors Relating to Active Muscle Stiffness”  
Co-Investigator, University of Virginia (Principal Investigator; Kevin P. Granata, PhD): Not Funded
- The Aircast Foundation, Inc.** **Submitted April, 1999**  
"Estradiol and progesterone levels and knee joint stiffness". Co-Investigator, University of Virginia  
(Principal Investigator; David H. Perrin): Not Funded.

## Patents

- Reflex Testing Apparatus** **Submitted January, 2004**  
A Reflex Testing Apparatus (RTA) designed to initiate a patellar tendon reflex while anterior directed loads displace the tibia relative to the femur (University of North Carolina at Greensboro; Greensboro, NC - patent pending). The diagnostic capabilities of this device in quantifying neuromuscular functional deficits and recovery is currently being explored.  
Principal Inventor.

## Refereed Journal Publications

1. Anderson T, Shultz SJ, Williams NI, Casey E, Kincaid Z, Wideman L. Detection Rates of Relaxin in Eumenorrhic Non-Pregnant Women. *Women in Sport and Physical Activity Journal (In Review, March 2018)*.
2. Casey E, Anderson T, Wideman L, Schofer F, Shultz SJ. Optimal Paradigms for Measuring Peak Serum Relaxin in Eumenorrhic, Active Females. *Knee Surgery Sport Traumatology (In Review March 2018)*.
3. Anderson T, Wasserman E, Shultz SJ. ACL Injury Risk in NCAA Athletes is Dependent on Season Period and Competitive Segment: An Analysis of NCAA Injury Surveillance Data. *Journal of Athletic Training. (In Review November 13, 2017; Revised and Resubmit April 2018).*
4. Wittstein MW, Wang J, Day T, Schmitz RJ, Shultz SJ, Rhea CK. The Association between Multi-planar Knee Joint Laxity and Dynamic Patterns of Gait. *Aging Clinical and Experimental Research (In Review December 08, 2017)*.

5. Wittstein MW, Starobin J, Schmitz RJ, Shultz SJ, Haran J, Rhea CK. Cardiac and Gait Rhythms in Healthy Younger and Older Adults during Treadmill Walking Tasks. *Aging Clinical and Experimental Research (In Press; accepted 4/26/2018)*
6. Schmitz RJ, Wang HS, Kraft R, Ross SE, Henson R, Perrin DH, Shultz SJ. Regional Differences in Anterior Cruciate Ligament Imaging Biomarkers: T2 and T2\* Values. *Muscle, Tendon and Ligament Journal (In Press; Accepted April 19, 2018)*
7. Wang HM, Shultz SJ, Ross SE, Henson RA, Perrin DH, Kraft RA, Schmitz RJ. Sex Comparisons of In-Vivo ACL Morphology. *Journal of Athletic Training (In Press; Accepted April 7<sup>th</sup>, 2018)*
8. Taylor JB, Ford KR, Schmitz RJ, Ross SE, Ackerman TA, Shultz SJ. Sport-specific biomechanical responses to an ACL injury prevention program: A randomized controlled trial. *Journal of Sports Sciences. (In Press; Accepted April 10<sup>th</sup>, 2018)*. <https://www.tandfonline.com/eprint/JVAh2XFGWhTUPbFqJXDafull>
9. Taylor JB, Ford KR, Schmitz RJ, Ross SE, Ackerman TA, Shultz SJ. A 6-week warm-up injury prevention program results in minimal biomechanical changes during jump landings: a randomized controlled trial. *Knee Surgery, Sports Traumatology and Arthroscopy. 2018; (In Press)*
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### Consensus Statements and Guidelines (Peer-Reviewed)

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### Invited Papers

1. Shultz SJ. Anterior Cruciate Ligament Injury in the Female Athlete: A Multifactorial Problem That Remains Poorly Understood. *Journal of Athletic Training*. 2008;43(5):455
2. Beynon BD, Shultz SJ. Keynote Address II: Anatomic Alignment, Menstrual Cycle Phase, and the Risk of Anterior Cruciate Ligament Injury. *Journal of Athletic Training*. 2008;43(5):541-542
3. Perrin DH, Shultz SJ. Physical Rehabilitation and the Challenge of Anterior Cruciate Ligament Injury in the Physically Active Female. *Quest* 2005; 57:154-161

### Refereed Published Abstracts

1. Anderson T, Shultz SJ, Wideman L. Relaxin and Sex Hormone Contributions to Laxity Changes Across the Menstrual Cycle. *Medicine and Science in Sports and Exercise*. 2017;45(5S):681. *Presented at the American College of Sports Medicine Annual Meeting and Clinical Symposium, Denver, CO.*
2. Wang HM, Shultz SJ, Ross SE, Henson RA, Perrin DH, Kraft RA, Schmitz RJ. Comparisons of ACL Laxity, Size and Intrinsic Properties Between ACLR and Healthy Individuals. *Journal of Athletic Training*. 2017;52(6):S-83. *Presented at National Athletic Trainers Association Annual Meeting and Clinical Symposium June 2017.*
3. Hogg JA, Shelton Z, Schmitz RJ, Shultz SJ. Neuromechanical Differences during a Single-Leg Forward landing in Females with High and Low Hip Internal Rotation Range of Motion. *Journal of Athletic Training*. 2017;52(6):S-90. *Presented at National Athletic Trainers Association Annual Meeting and Clinical Symposium. June 2017.*
4. Waxman JP, Blackburn JT, Rhea CK, Schmitz RJ, Henson RA, Shultz SJ. The Influence of Hamstring Stiffness on ACL Loading Characteristics. 41<sup>st</sup> Annual Meeting of the American Society of Biomechanics. (Accepted for Presentation, August 2017)
5. Taylor JB, Ford K, Nguyen A, Shultz SJ. Biomechanical characteristics of responders and non-responders to an ACL injury prevention program. APTA Combined Sections Meeting. February 2017, San Antonio, TX. (*accepted*)
6. Wittstein MW, Starobin JM, Schmitz RJ, Shultz SJ, Haran FJ, Rhea CK. Task Demands during Walking Enhance Cardiolocomotor Coupling. *40<sup>th</sup> Annual Meeting of the American Society of Biomechanics, August 2<sup>nd</sup>-5<sup>th</sup>, 2016.*
7. Wang HM, Shultz SJ, Waxman JP, Pye MO, Kraft RA, Schmitz RJ. Dominant to Non-Dominant Limb Measures of ACL Volume and Anterior Knee Laxity. *Journal of Athletic Training*. 2016; 51(6):42
8. Hogg JA, Schmitz RJ, Shultz SJ. The Influence of Femoral Anteversion and Hip ROM on Dynamic Knee Valgus in Females During a Single-Leg Forward Hop. *Journal of Athletic Training*. 2016; 51(6):76
9. Mulrey CR, Ford KR, Shultz SJ, Nguyen AD, Taylor JB. Identifying Limb Dominance in Adolescent Female Basketball Players: Implications for Biomechanical Research. Presented at the 62<sup>nd</sup> Annual Meeting of the American College of Sports Medicine. *Medicine Science in Sports and Exercise*. 2016;48(5S):741
10. Tripp SG, Ford KR, Shultz SJ, Nguyen AD, Taylor JB. Single-Sport Athletes Exhibit More Lower Extremity Valgus than Multi-Sport Athletes. Presented at the 62<sup>nd</sup> Annual Meeting of the American College of Sports Medicine. *Medicine Science in Sports and Exercise*. 2016;48(5S):286
11. Taylor JB, Ford KR, Shultz SJ. Knee biomechanics of bilateral and unilateral multi-directional landings: Implications for ACL Injury. APTA Combined Sections Meeting. February 2015, Indianapolis, IN. (*accepted*)
12. Taylor JB, Ford KR, Shultz SJ. Performance consistency of multi-directional bilateral and unilateral jump landings. APTA Combined Sections Meeting. February 2015, Indianapolis, IN.
13. Waxman, J.P., Schmitz, R.J., & Shultz, S.J. (2015). The inter-day measurement consistency and precision of hamstring and leg musculo-articular stiffness. (Presented at The 25<sup>th</sup> Congress of the International Society of Biomechanics Conference, Glasgow, Scotland)
14. Waxman, J.P., Schmitz, R.J., & Shultz, S.J. (2015). Hamstring stiffness is related to anterior tibial translation when transitioning from non-weight bearing to weight bearing. (Presented at The 33<sup>rd</sup> International Society of Biomechanics In Sports Conference, Poitiers, France)
15. Waxman, J.P., Schmitz, R.J., & Shultz, S.J. (2015). The inter-day measurement consistency and precision of hamstring musculo-articular stiffness. (Presented at the 2015 Human Movement Science Research Symposium, Chapel Hill, NC)
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- [Shultz SJ](#). (2016) “Chapter 6: The Effect of Sex Hormones on Ligament Structure, Joint Stability and ACL Injury Risk”. In [Sex Hormones, Exercise and Women: Scientific and Clinical Aspects](#). Hackney A, Ed.. Springer Science+Business Media, New York. 370 pages. (pp. 113-138)
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- [Shultz S.J.](#) & Brumels K. “Chapter 7. Injury Mechanisms and Classifications” In [Core Concepts in Athletic Training and Therapy](#). S.K. Hillman, Ed. Human Kinetics: Champaign. 613 pages. 2012 (pp. 163-182)
- [Shultz S.J.](#) & Brumels K. “Chapter 8. Principles of Examination” In [Core Concepts in Athletic Training and Therapy](#). S.K. Hillman, Ed. Human Kinetics: Champaign. 613 pages. 2012 (pp. 183-200)

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- Shultz S.J., Nguyen A.D., Beynon B.D. Chapter 20: “Anatomical Factors in ACL Injury Risk” In Understanding and Preventing Non-Contact ACL Injury. TE Hewett, LY Griffin, & SJ Shultz Editors. Human Kinetics: Champaign, IL. 310 pages. 2007 (pp. 239-258)
- Shultz S.J. Chapter 19: “Hormonal Influences on Ligament Biology” In Understanding and Preventing Non-Contact ACL Injury. TE Hewett, LY Griffin, & SJ Shultz Editors. Human Kinetics: Champaign, IL. 310 pages. 2007 (pp. 219-238)
- Shultz S.J. Chapter 6: “Preventative Training Programs: Changing Strength Ratios versus Positions of Muscular Efficiency?” In Understanding and Preventing Non-Contact ACL Injury. TE Hewett, LY Griffin, & SJ Shultz Editors. Human Kinetics: Champaign, IL. 310 pages. 2007 (pp. 91-102)
- Shultz S.J. Introduction to Grant Writing and Research Funding Sources. 2005. In: Arnold B.L., Perrin D.H. & Ganseder B.G. Research in Athletic Training. Philadelphia: F.A. Davis; Chapter 19.
- Perrin D.H., Shultz S.J. Models for clinical research involving proprioception and neuromuscular control. 2000. In: Lephart SM, Fu FH, eds. Proprioception and Neuromuscular Control in Joint Stability. Champaign: Human Kinetics.

### Book Editorship

Section IV: Hormonal and Anatomical Risk Factors and Preventative Bracing for ACL Injuries. Shultz SJ. Section Editor. In Understanding and Preventing Non Contact ACL Injury. 2005. Human Kinetics: Champaign, IL.

### Book Ancillaries / Multimedia Publications

- Shultz, S.J., Houglum, P.A. & Perrin, D.H. Examination of Musculoskeletal Injuries Presentation Package (CD ROM). 2000. Human Kinetics: Champaign, IL.
- Valovich, T.C. for Shultz, S.J., Houglum, P.A. & Perrin, D.H. Assessment of Athletic Injuries Graphics Package (CD ROM). 2000. Human Kinetics: Champaign, IL.
- Valovich, T.C. for Shultz, S.J., Houglum, P.A. & Perrin, D.H. Assessment of Athletic Injuries Instructor Guide and Test Package (CD ROM). 2000. Human Kinetics: Champaign, IL.

### Monographs / Handbooks

- Pollard CD, Sigward SM, and Shultz SJ. Risk Factors for ACL Injuries. Monograph for Independent Study Course 19.1 Update on Anterior Cruciate Ligament Injuries Orthopaedic Section, American Physical Therapy Association. Approval Dates 2009-2010.
- Shultz, S.J., Valovich, T.C. & Zinder, S.M. Sports Medicine Handbook. 3<sup>rd</sup> Edition. National Federation of State High School Associations: Indianapolis, IN. In Press.
- Shultz, S.J., Valovich, T.C. & Zinder, S.M. Sports Medicine Handbook. 2<sup>nd</sup> Edition. National Federation of State High School Associations: Indianapolis, IN. 2002.
- Shultz, S.J., NFL Youth Football Project. Series of articles on the topic of Strength and Conditioning specific to youth football sport participation. “Essential Components of a Strength and Conditioning Program”, “Proper Warm Up and Cool Down”, and “When Not to Ignore Aches and Pains”. National Football League, 2002.

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Shultz, S.J., Rudd, D.A., Miller, D.A. & Dixon-Burns, A. Revised Recommendations and Guidelines for Appropriate Medical Coverage of Intercollegiate Athletics. National Athletic Trainers Association; Dallas, TX. March 2003

Shultz, S.J., Rudd, D.A., Miller, D.A. & Dixon-Burns, A. Recommendations and Guidelines for Appropriate Medical Coverage of Intercollegiate Athletics. National Athletic Trainers Association; Dallas, TX. March 2000

## **TEACHING AND ADVISING**

### **Course Instruction**

#### **University of North Carolina @ Greensboro: Department of Exercise & Sport Sciences**

"Recognition of Injuries and Illness in Physical Activity (KIN 353)	Spring 2018
"Neural Aspects of Injury and Rehabilitation" (KIN 711): Instructor	Spring 2012
"Applying Research to Profession Practice in Kinesiology" (KIN 601): Instructor	Spring 2011, 2012
"Research Seminar in Applied Neuromechanics (KIN 702): Instructor	Fall & Spring 2005-Present
"Neural Aspects of Motor Control (ESS 730): Co-Instructor	Spring 2004, 2006, 2008, 2010, 2018
"Doctoral Seminar in Grant Writing" (KIN 798): Instructor	Fall 2003-2006, 2009-Present
"Doctoral Seminar in Grant Writing (KIN 798 – Online): Developer and Instructor	Spring 2017
"Management and Professional Issues in Athletic Training" (KIN725): Co-Instructor	Fall 2003, 2004, 2005
"Therapeutic Techniques in Rehabilitating Athletic Injuries" (KIN 640): Instructor	Spring 2003 - 2006, 2008
"Clinical Education III: Athletic Injury Assessment" (KIN 541): Co-Instructor	Fall 2002

#### **University of Virginia: Department of Human Services**

"Orthopedic Basis of Sport Injury" (EDHS 841): Instructor	Spring 2002
"Emergency Medical Care" (EDHS 451/552): Instructor	Spring 2000, 2001, 2002
"Seminar in Educational Research" (EDHS 744): Co-Instructor	Spring 2000, 2001, 2002
"Masters Thesis: Research in Athletic Training" (EDHS 899): Co-Instructor	Fall & Spring 1999-2002
"Current Trends in Athletic Training" (EDHS 850): Instructor	Fall 1999, 2000, 2001
"Doctoral Seminar in Grant Writing" (EDHS 850): Instructor	Fall 2000
"Instrumentation in Clinical Assessment and Sports Medicine Research" (EDHS 589): Instructor	Spring & Fall 1999
"Masters Thesis: Research in Athletic Training" (EDHS 899): Teaching Assistant	Fall & Spring 1997-98
"Anatomical Basis of Sports Medicine" (EDHS 758): Graduate Assistant Instructor	Summer 1998
"Skeletal Biomechanics" (BIOM 793): Guest Lecturer	Fall, 2000
"Orthopaedic Basis of Athletic Training" (EDHS 841): Guest Lecturer	Spring 1998 & 1999
"Advanced Athletic Training" (EDHS 589): Guest Lecturer	Spring 1998

#### **UCLA Extension: Department of Humanities, Sciences and Social Sciences**

"Basic Care and Prevention of Athletic Injuries" (X457.5)	Winter 1995 & 1996
"Advanced Athletic Training: Evaluation of Athletic Injuries" (X457.4)	Spring 1993 & 1994
"Prevention and Recognition of Injuries for Fitness Instructors" (X468)	Winter 1994

#### **California State University, Fullerton: Depart. of Kinesiology and Health Promotions**

"Rehabilitation and Therapeutic Modalities" (PHED 367): Co-Instructor	Fall 1993 & 1994
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### **Doctoral Advisory / Dissertation Committee Chair**

Mackenzie Pierson (2017- )

Jennifer Hogg (2013 – 2017). "The Influence of Femoral Structure, Hip Capsular Constraints, and Gluteal Muscle Strength and Activation on Temporal Patterns of Functional Valgus Collapse"

Matthew Wittstein (2013 – 2016). "Variability and Coupling of Cardiac and Locomotor Rhythms During Treadmill Walking Tasks"

Justin Waxman (2012 – 2016). "The Influence of Hamstring Musculo-Articular Hamstring Stiffness on Biomechanical Factors of ACL Loading"

- Jeffrey Taylor (2012 – 2016). “*Differential Biomechanical Effects of an ACL Injury Prevention Program in Women’s Basketball and Soccer Players*”
- Michele Pye (2010-2014). “*Comparison of Neuromuscular Control Strategies between Collegiate Female Dancers and Athletes*”
- Amanda Tritsch (2009-2013). “*Associations between Physical Characteristics and Landing Biomechanics in Adolescent Females*”
- Vasanth Subramanian (2009-2014; Co-Chair w/ K Kornatz). “*Effect of Low Back Pain on Movement Accuracy*” (DNF)
- Melissa Montgomery (2007 – 2011). “*The Effect of Lean Body Mass and Strength on Lower Extremity Energy Absorption Strategies during Landing*”
- John Cone (2007 – 2010). “*The Effect of an Individualized Soccer Match Simulation on Movement and Performance*”
- Hyunsoo Kim (2006 – 2011). Did not complete program.
- Aaron Terranova, Ed.D. (2005 – 2008; Co-Chair with JM Henning). “*The Relationship Between Job Satisfaction and Intent to Leave in Collegiate Certified Athletic Trainers*”
- Anh-Dung Nguyen, PhD (2004 – 2007). “*Effects of Lower Extremity Posture on Hip Strength and Their Influence on Lower Extremity Kinematics During a Single Leg Squat*”
- Yohei Shimokochi, PhD (2003 – 2006). “*The Effect of Tibialis Anterior Fatigue on Knee Internal Rotation and Ankle Eversion During Heel to Toe Landings*”
- Jatin Ambegoankar, PhD (2003 – 2006; Co-Chair with DH Perrin). “*A Comparison Of Muscle Activation and Knee Joint Stiffness between Female Dancers and Basketball Players during Drop Jumps*”
- Michelle Lesperance, Ed.D (2002 – 2008; Co-Chair with JM Henning). “*The Effects of Problem-Based Learning on Students’ Critical Thinking Skills*”
- Thomas Windley, PhD (2002 – 2005). “*Anatomical and Neuromuscular Contributions to Anterior Knee Shear Force During Single-Leg Landings in Females*”
- Christopher Carcia, PhD (1999 – 2002). “*Effect of Controlled Loading on Knee Ligament Behavior Between Genders*”
- Todd Sanders, PhD (2000-2003). “*Sex Related Motor Control Compensations During Landing Tasks*”

#### **Doctoral Advisory / Dissertation Committee Member**

- Hsing-Min Wang (2011 – 2017). “*The Relationship of ACL Morphology and Structural Composition to Knee Joint Laxity*”
- Marc Norcross (2010-2012). “*Energetic Analysis of Landing: A Novel Approach to Understanding Anterior Cruciate Ligament Injuries*” (Doctoral Student at University of North Carolina at Chapel Hill)
- Jerome Sauret (2007 – 2011). “*The Validation of sEMG-Torque Relationship During a Dynamic Landing Task*”
- Megan Granquist (2005 – 2008). “*Development of a Rehabilitation Adherence Measure for Athletic Training*”
- Lee Howard, PhD (2002 – 2005). “*Kinematic and Kinetic Effects of Knee and Ankle Sagittal Plane Joint Restrictions During Squatting*”
- Anthony Kulas, PhD (2002 – 2005). “*Effects of the Abdominal Hollowing Maneuver on Lower Extremity Biomechanics during Drop Landings*”
- Carrie Docherty, PhD (2000 – 2003). “*Characteristic changes in functional performance in volunteers with ankle instability*” (Advisory Committee Only)
- Joshua Drouin, PhD (1999 – 2002). “*The Relationship Between Muscular Timing and Magnitude During a Stepping Task and Subjectively Reported Ankle Instability*”
- Steven Zinder, PhD (1999 – 2002). “*The Effect of Ankle Bracing and Functional Ankle Instability on Inversion/Eversion Ankle Stiffness*”
- Tamara Valovich, PhD (1998 – 2001). “*The Use of the Standardized Assessment of Concussion and Balance Error Scoring System and Learning Effects in Youth Sports Participants*”

**Masters Thesis Committee Chair**

Elvis Foli (2017- Present).

Mara Mohler (2012 – 2014). *“The Ability of the FMS to Predict Knee Injury in Female Collegiate Athletes”*

Elena Schacht (2012 – 2014). *“Effect of Ankle Dorsiflexion Range of Motion on Knee Biomechanics; Implications for Patellofemoral Pain Syndrome”*

Lavanya Kailas (2009 – 2011). *“Effect of Oral Contraceptive Pills on Anterior Cruciate Ligament Injury Risk”*

Ashley Rockey, MS (2006 – 2008). *“The Relationship between Anterior Pelvic Tilt, Hamstring Extensibility and Hamstring Strength”*

Krystal Smith, MS (2005 – 2007). *“Hormone Status and Measures of Joint Laxity”*

Tyler Hamilton, MS (2004 – 2006). *“Tests of Lower Limb Strength, Power and Balance as Predictors of Performance on a Single Leg Triple Hop for Distance”*

Timothy Botic, MS (2003 – 2005). *“Development of a Landmark Protocol to Construct Segment Axes for Lower Extremity Kinematic Analyses”*

Linda Anstee, M.Ed. (2001 – 2002). *“Intertester and Intratester Reliability of a Functional Movement Screen™”*

David Bell, M.Ed. (2001 – 2002). *“The Effect of Trunk Position on Reflex Timing and Amplitude in Response to a Lower Extremity Perturbation”*

James Eggen, M.Ed. (2001 – 2002). *“Hip Abductor Fatigue Affects Frontal Plane Motion Following a Drop Jump”*

Scott Gross, M.Ed. (2001 – 2002). *“Effect of Rate of Force Application on Anterior Knee Laxity and Stiffness”*

Timothy Kelly, M.Ed. (2001 – 2002). *“The Effect of Peroneal Muscle Fatigue on Medial/Lateral Ankle Stiffness”*

Sarah Lathrop, M.Ed. (2001 – 2002). *“Evaluation of Eating Behaviors and Attitudes in Male Athletes Using Two Survey Instruments”*

Monica Murrell, M.Ed. (2001 – 2002). *“The Effect of Moderate Exertion on Neuromuscular Activation Following a Lower Extremity Perturbation”*

Katie Rybak, M.Ed. (2001 – 2002). *“The Effect of Functional Ankle Instability on Static and Dynamic Joint Reposition Sense”*

Thomas Susco, M.Ed. (2001 – 2002). *“Gender Effects on Balance Recovery Timelines From Exertion as Measured using the Balance Error Scoring System”*

Lauren Swisher, M.Ed. (2001 – 2002). *“Gender Differences in Muscular Activation Patterns at the Knee in Pre-pubescents”*

Brady Tripp, M.Ed. (2001 – 2002). *“The Effects of Functional Fatigue on Active Multi-joint Position Reproduction of the Throwing Shoulder”*

Shelley Croom, M.Ed. (2001 – 2002). *“The Effect of Lower Extremity Injury on Postural Control as Measured by the Balance Error Scoring System”*

Karen Cote, M.Ed. (2000 – 2001). *“Effect of Foot Type on Center of Pressure and Balance”*

Jennifer D’Amico, M.Ed. (2000 – 2001). *“The Effect of Functional Fatigue on Balance in Stable and Unstable Ankles”*

Melissa Hargrave, M.Ed. (2000 – 2001). *“Influence of Navicular Drop on Ground Reaction Forces and Rate of Loading During Landing”*

Aaron Terranova, M.Ed. (2000 – 2001). *“The Effect of Athletic Taping on Fibularis Muscle Latency”*

Tori Depp, M.Ed. (1999 – 2000). *“The Effect of Foot Orthotics on Muscle Activation Patterns in Selected Lower Extremity Muscles During Gait”*

Brian Moore, M.Ed. (1999 – 2000). *“The Effect of Gender and Fatigue on Electromechanical Delay in Elite Athletes”*

Lauren Olmsted, M.Ed. (1999 – 2000). *“Effects of Functional Ankle Instability on the Performance of the Star Excursion Balance Test”*

Jasper Richardson, M.Ed. (1999 – 2000). *“The Relationship between Foot Placement Angle and Navicular Drop”*

## **LEADERSHIP TRAINING**

### **BRIDGES Academic Leadership for Women**

**Fall 2015**

**BRIDGES** is an inclusive professional development program for women in higher education who seek to gain or strengthen their academic leadership capabilities. It is designed to help women identify, understand, and build their leadership roles in the academy. Through an intensive program, participants: 1) develop insights into leadership, with a particular focus on the special skills and attributes women bring to their leadership roles; 2) acquire an understanding of the many facets of colleges and universities; 3) refine and improve their cross-cultural communication skills; and 4) create a program of personal and professional development to benefit themselves and their institutions

## **SERVICE**

### **University Service**

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

*Chair, Department of Kinesiology (Interim August 2012 – April 2013)*

*April 2013 – June 2017*

Responsible for planning, program development, budget allocations and management of resources, student services, curricula, accreditation, recommendation for appointments as well as promotion and tenure recommendations in consultation with the faculty, faculty and staff orientation and development, resource enhancement, and the advancement of the department's mission and goals within the University and the College or school. The department head represents the department on and off campus and fosters interdepartmental relationships as well as interactions with appropriate external constituencies.

#### *Graduate Studies Committee (Department of Kinesiology)*

*September 2010 – August 2011*

In cooperation with The Graduate School, Department Head, and Director of Graduate Studies establish, collate and administer departmental policies regarding: a) the recruitment, admission, retention and advising of graduate students; b) the evaluation of graduate program effectiveness; c) the administration of department graduate programs, and d) the monitoring and evaluation of student progress for those who are matriculating through the graduate programs in the Department of Kinesiology. Review and select applicants for graduate student grants and awards.

#### *Director of Graduate Study (Department of Kinesiology)*

*January 2006 – August 2011*

Responsible for the administration of processes related to the recruitment, admission, advising and qualifying of graduate students in the Department of Kinesiology. Directors of Graduate Study work collaboratively with The Graduate School on all matters relating to graduate education. Chair the Department of Kinesiology Graduate Studies Committee.

#### *Research Excellence Selection Committee*

*April – May, 2010, 2014*

Reviewed Materials and Selected Research Excellence Award Recipients for the 2009-2010 and 2013-14 Academic Year

#### *Faculty Search Committees*

Department Chair and Professor of Nursing; Department of Family and Comm Health

October 2016 – April 2017

Assistant/Associate Professor and MSAT Program Director

October 2011 – February 2012

Assistant/Associate Professor, Sports Medicine and Applied Neuromechanics (Chair)

December 2009 – May 2010

Associate Dean for Research, School of Health and Human Performance

May 2007 – July 2007

Professor and Head, Department of Exercise and Sport Science (Chair)

December 2006 - 2008

Provost and Vice Chancellor for Academic Affairs

November 2006 – May 2007

Director of Undergraduate Research, Office of the Vice Provost for Research

August 2005 – December 2005

Senior Faculty Member, Department of Public Health Education

October 2003 – June 2004

Senior Research Professor (2 positions), Office of the Provost

November 2003 – June 2005

Athletic Training Program Director, Department of Exercise & Sport Science (Chair)

January 2004-May 2004

#### *Promotion & Tenure Committees*

Promotion with Tenure; Department of Nanoscience

Fall, 2013

#### *Research Advisory Council (School of Health and Human Performance)*

*January 2005 – 2008*

Advisory committee to the Associate Dean of Research in the School of Health and Human Performance; Serve as Awards Committee for all School research awards.

#### *Center for Women's Health and Wellness (School of Health and Human Performance)*

*August 2004 – 2007*

The mission of the Center for Women's Health and Wellness is to advance the health and wellness of all women and girls through collaborative research and educational programs.

*Ed.D. Curriculum Task Force* *Spring 2006; 2012-Present*  
 Revised the Ed.D. Program Mission, Vision, Goals and Curricular Program of Study in the Department of Exercise and Sport Science (2006); transition EdD in Kinesiology to fully online program (2012-)

*Undergraduate Research Committee* *September 2003 – 2006*  
*Interim Chair (2005-2006)*

This University Wide committee is intended to support undergraduate research activities on campus, including the review and selection of candidates for undergraduate research internships.

*External Grant Reviewer* *February 2004*  
 NCARS Proposal: “Effect of Exercise Training During Lactation on Maternal Bone Status”. C. Lovelady, Principal Investigator. School of Human Environmental Sciences.

*Grant Writing Workshop Selection Committee* *April 2003*  
 Committee selected by the Associate Provost for Research to review applications and select participants for a one-year intensive grant writing course.

*Program Director – CAAHEP Accredited Entry Level Masters Degree Program in Athletic Training* *2002 – 2004*  
 Responsible for overall direction of the CAAHEP Accredited Entry Level Masters Degree Program; including admission and retention of students, on-going program evaluation, curricular revisions, student orientation and advisement, coordination of in-services, and preparation of annual reports to the Joint Review Committee on Athletic Training Programs.

*CAAHEP Accreditation Committee – Entry Level Masters’ Degree Program* *August 2002 - April 2003*  
 Assisted with completion of the self-study document, and in coordination and preparation for the site-visit. Responsible for the preparation and submission of the UNCG Site Visit Rejoinder.

### ***University of Virginia***

*Interim Program Director- Graduate Program in Athletic Training* *2001-02*  
 Responsible for overall direction of the NATA Accredited Post-Certified Masters Degree Program in Athletic Training; including admission and retention of students, student advisement, program evaluation and annual reporting.

*NATA Accreditation Self Study Committee – Advanced Graduate Program in Athletic Training* *1999 - 2000*  
 Assisted with completion of the self-study document, and in the coordination and preparation for the site-visit.

### **Professional Organizations / Committees – International / National**

*National Academy of Kinesiology* *2017 – Present*  
*Membership Committee*

*American Kinesiology Association* *2014-Present*  
 Board of Directors (Chair, Future Directions Committee 2016-Present)

*ACL Injury Research Retreat IV, V, VI, VII & VIII* *2007 - Present*  
*Conference Director – 2008, 2010, 2012, 2015 & 2019 meetings*  
 Plan and organize meeting, seek sponsors and outside funding to support meeting, review and selection of abstracts for presentation, program development, secure keynote speakers and moderators

*NATA Foundation Mentorship Program* *2013 - Present*  
 Professional Mentor for Marc F Norcross, PhD  
 Serve as professional and scientific mentor to young academic-researchers in the field of athletic training.

*Pronouncements Committee - Writing Group Member ACL Injury Prevention Position Statement* *2010 – Present*  
 Develop a position statement on the current state of knowledge in ACL injury prevention programs and make recommendations for clinical practice and future research.

*American Academy of Orthopaedic Surgeons* *2015*  
*Appropriate Use Criteria for Management of Anterior Cruciate Ligament Injuries*

*American Academy of Orthopaedic Surgeons* *2011 - 2015*  
*Writing Group Member; The Management of Anterior Cruciate Ligament Injuries: Evidence-Based Guideline and Evidence Report. <http://www.aaos.org/research/guidelines/ACLGuidelineFINAL.pdf>. Published September 8, 2014.*  
 Participate on a committee of orthopaedists, pediatricians, physical therapists, biomechanists and athletic trainer clinician/researchers to develop clinical practice guidelines on the diagnosis, care, rehabilitation and prevention of ACL Injuries.

**National Athletic Trainers' Association**

- Awards Recognition Task Force (Member)* 2010-2013  
Review and revise existing award mechanisms.
- Fellows Award Committee (Chair, 2009 - present)* 2008-2013  
Review and make recommendations to the Board regarding the awarding of fellowship status.
- Convention Committee* 2003-2007  
Past Chair (2006-2007); Committee Chair (2004-2006); Chair Elect (2003-04). Oversee the planning and organization of the NATA's Annual Meeting and Clinical Symposia for ~10,000 attendees
- Appropriate Medical Care for Secondary School Athletes Task Force* 2002-2005  
Writing Team / Research Consultant, Task Force Member. The mission of this task force (comprised of physician, allied health professional, and high school athletic administrative organizations) was to write a consensus statement and background document providing recommendation and guidelines for appropriate medical care of secondary school aged athletes.
- Strategic Planning Task Force* 2001-2002  
Task Force Member; Team Leader for Strengthening Credibility and Visibility. To develop a strategic plan for the National Athletic Trainers' Association to clarify and strengthen professional and public identity; increase funding levels; and effectively address the employment reimbursement, education and regulatory issues affecting the membership.
- Convention Committee* 1998-2002  
Organization and planning of educational programming for the NATA's Annual Meeting and Clinical Symposium; Clinical Program Sub-Committee Chair planning 65 Workshops, Dallas, TX - June, 2002; Clinical Program Sub-Committee Chair planning 16 Symposia Sessions, Los Angeles, CA - June, 2001; Clinical Program Sub-Committee Chair planning 12 Minicourses, Nashville, TN - June, 2000
- Appropriate Medical Coverage for Intercollegiate Athletics Task Force* 1998-2003  
Writing Group Chair; Committee Member. To develop and publish recommendations and guidelines for appropriate medical coverage and care of intercollegiate athletes.
- Pronouncements Committee* 1997-2004  
Committee member. Oversee the development, review and approval of NATA Position Statements on Lightning Safety (2000), Fluid Replacement (2000), Emergency Planning (2002), Exertional Heat Illness (2002), Sparring (2004), and Sport Related Concussion (2004).
- Education Council - Entry Level Education Committee* 1997-2000  
Committee member. A sub-committee of the National Athletic Trainers' Association Education Council, providing direction, guidelines and resources for entry-level athletic training education programs.
- District Secretary and Treasurer's Committee* 1996-1999  
Committee member. A committee comprised of the district secretaries and treasurers of the 10 districts of the NATA, to address membership, financial and organization issues.
- College and University Athletic Trainers Committee* 1994 - 1996  
Committee member, 1994-1996; Task Force Member, 1993-94. Mission is to 1) promote institutional ownership in the integrated health care delivery system in intercollegiate athletics; 2) identify and address issues related to the health and safety of the student athlete; and 3) address concerns of the certified athletic trainer in the collegiate setting.
- National Athletic Trainers' Association Research and Education Foundation Research Committee** 2006-2012  
*Vice Chair for Student Grants 2009-2012*  
Review and make recommendations to the Board regarding all grant and research applications awarded through the Foundation; Review, approve and schedule all Free Communications for the Annual Meeting. Review and select research excellence awards
- World Congress of Sport Injury Prevention**  
*Scientific Committee (2<sup>nd</sup> Congress Tromso, Norway 2008; 3<sup>rd</sup> Congress, Monaco 2011)* 2006 - 2011  
The role of the scientific committee is to contribute to the planning phase of the meeting, review and selection of topic proposals, speaker selection.
- Joint Review Committee on Athletic Training Education Programs (JRC-AT)**  
Site-Visitor; Long Island University, Brooklyn, NY Spring 2004  
Site-Visitor; Northeastern University, Boston, MA Spring 2005

<b>American College of Sports Medicine</b> Member #126976	1998 - Present
<b>National Strength and Conditioning Association</b> Certified Member	1988 - Present
<b>REEBOK C.O.R.P.S. Program</b> Member	1991 - 1996

**Professional Organizations / Committees - Regional**

<b>Mid Atlantic Athletic Trainers' Association</b> Certified Member	1999 - Present
<b>Far West Athletic Trainers' Association</b> District Secretary-Treasurer (1996-1999) College and University Athletic Trainers Committee, Chair (1994 - 1996)	1980 - 1999

**Professional Organizations / Committees - State or Local**

<b>North Carolina Athletic Trainer's Association</b> Certified Member	2002 - Present
<b>Virginia Athletic Trainer's Association</b> Certified Member	1999 - 2002
<b>California Athletic Trainer's Association</b> Treasurer: Political Action Committee (1987-1990)	1985 - 1999

**Consultant / Panelist / Advisory Roles**

<b>External Examiner</b> Aaron S. Fox, PhD Thesis (2016). <i>Neuromechanics of the Lower Limb: Implications for ACL Injury Prevention</i>	April 2016
<b>External Examiner</b> MC Burger, PhD (2014). <i>Genetic Risk Factors for Carpal Tunnel Syndrome</i> . University of Cape Town, South Africa	October 2014
<b>Samara Innovations LLC</b> Consultant to assist in the development of a business opportunity and associated products in the area of athletic injury prevention, rehabilitation and performance improvement.	July 2008 – 2010
<b>International Olympic Committee; Lausanne, Switzerland</b> Participated on an International Expert Panel for Consensus Meeting on ACL Injury in the Female Athlete	February 2008
<b>Oslo Sports Trauma Research Center, Norwegian School of Sports Sciences; Oslo Norway</b> Invited guest to participate in three day research retreat to critique and provide feedback on student research projects at the MS, PhD and Post Doctoral levels.	May 2007
<b>University of Michigan Sports Injury Prevention Center</b> Advisory Council Member: Assist with defining the research direction for the center. Participated in Inaugural symposium to open the center (May, 2007).	August, 2006 – Present
<b>Hunt Valley II: Consensus Conference on ACL Injury Prevention Programs</b> Participant and Presenter: Impact of Prevention Programs on Agonist/Antagonist Strength Ratios Sponsored by the American Orthopaedic Society for Sports Medicine; Atlanta, GA	January, 2005
<b>Greensboro Youth Soccer Sports Medicine Consortium</b> This non-profit group of sports medicine and fitness professionals are developing a web site and educational materials with the goal of "Soccer-related Injury Prevention through Education and Performance Enhancement"	September 2002 – Present
<b>Sports Health Care Community Advisory Committee</b> Arizona School of Health Sciences; Mesa Arizona The committee serves to insure the ASHS Sport Health Care Program remains in the professional forefront, exceeds accreditation requirements, attracts qualified students and faculty, and improves the health within their community, the nation and profession.	October 2002 – Present
<b>AOSSM, NATA &amp; NCAA Consensus Group on Non-Contact ACL Injury</b>	June 1999

Participant: Development of a Consensus Statement on Non-Contact ACL Injuries; Hunt Valley, MD

<b>National Collegiate Athletic Association</b>	1996 - 2000
Participant: Anterior Cruciate Ligament Study Group	
<b>Reebok Women's Sports Training Program</b>	1995 -1996
Technical Consultant / Development Team	
<b>United States Tennis Association - Player Development Program</b>	1989 - 1992
Sports Science Advisor	

## Editorial

<b>Journal of Athletic Training</b>	2000 - Present
Senior Associate Editor (2015- Present)	
Section Editor: Byodynamics and Motor Control (July 2007 – Present)	
Editorial Board Member (August 2000 – July 2007)	
Editorial Assistant (September 1996 - May 2000)	
<b>Medicine and Science in Sport and Exercise</b>	2010 - Present
Editorial Board Member (May 2010 – Present)	
<b>Sports Health</b>	2008 - Present
Editorial Board Member (April 2008 – Present)	
<b>Isokinetics and Exercise</b>	2008 - Present
Editorial Board Member (April 2008 – Present)	

## External Reviewer for Promotion and Tenure

<i>Promotion to Associate with Tenure, Dept of Orthopaedic Surgery, University of Virginia</i>	October 2001
<i>Promotion to Associate with Tenure, Dept of Physical Education and Health, College of Charleston</i>	October 2002
<i>Review for Continuing Faculty Status, Dept of Exercise Science, Brigham Young University</i>	August 2008
<i>Promotion to Associate with Tenure, School of HPER, Indiana University</i>	August 2008
<i>Promotion to Associate with Tenure, Dept of Kinesiology, University of Michigan</i>	October 2009
<i>Promotion to Associate with Tenure, Dept of Kinesiology, University of Georgia</i>	March 2011
<i>Promotion to Full Professor, Dept of Exercise Science, Brigham Young University</i>	September 2011
<i>Promotion to Associate with Tenure; PT and Rehabilitation Science, University of Iowa</i>	October 2011
<i>Promotion to Full Professor; Health Sciences, University of Cape Town</i>	August 2012
<i>Promotion to Tenure; Dept of Nanoscience, University of North Carolina at Greensboro</i>	October 2013
<i>Promotion to Full Professor; School of Physical Therapy and Athl Training Old Dominion University</i>	November 2013
<i>Promotion to Associate with Tenure; Dept of Kinesiology, University of Connecticut</i>	June 2014
<i>Promotion to Full Professor; Dept of Exercise Science, University of Cape Town, South Africa</i>	August 2014
<i>Promotion to Full Professor; Dept of Kinesiology, Indiana University</i>	July 2015
<i>Promotion to Full Professor; Dept of Kinesiology and Applied Physiology, University of Delaware</i>	July 2015

## Manuscript Reviewer

<i>American Journal of Sports Medicine</i>	2011- 2016
<i>British Journal of Sports Medicine</i>	2001, 2007, 2008
<i>Clinical Biomechanics</i>	2009, 2010, 2011
<i>Clinical Journal of Sports Medicine</i>	2011
<i>Exercise and Sport Science Reviews</i>	2009
<i>Journal of Athletic Training</i>	1997 – Present
<i>Journal of Applied Biomechanics</i>	2011
<i>Journal of Biomechanics</i>	2006, 2008, 2010, 2012, 2014
<i>Journal of Bone and Joint Surgery</i>	2003
<i>Journal of Electromyography and Kinesiology</i>	2012, 2013, 2014, 2015
<i>Journal of Orthopaedic Research</i>	2006, 2008, 2010
<i>Journal of Sports Health</i>	2008 - Present
<i>International Journal of Sports Medicine</i>	2006, 2007, 2011
<i>Medical Engineering and Physics</i>	2009, 2013
<i>Medicine and Science in Sport and Exercise</i>	2005, 2007-Present

<i>Neuroscience Letters</i>	2010
<i>Research Quarterly</i>	2006, 2009
<i>Scandinavian Journal of Sports Medicine</i>	2008
<i>Sports Medicine</i>	2006, 2010, 2011
<i>Women in Sport and Physical Activity</i>	2006

**Grant Reviewer**

<b><i>NIH-NIAMS ZRG1 F10B Study Section - NRSA Fellowships</i></b>	July 2013
Special Emphasis Grants Review Committee (1 primary review, 3 secondary review, 4 discussant reviews)	
<b><i>NIH-NIAMS ZRG1 F10B Study Section - NRSA Fellowships</i></b>	July 2012
Special Emphasis Grants Review Committee (2 primary review, 3 secondary review, 4 discussant reviews)	
<b><i>NIH-NIAMS ZRG1 F10B Study Section - NRSA Fellowships</i></b>	October 2011
Special Emphasis Grants Review Committee (3 primary review, 3 secondary review, 3 discussant reviews)	
<b><i>NIH-NIAMS ZRG1 F10B Study Section - NRSA Fellowships</i></b>	July 2011
Special Emphasis Grants Review Committee (3 primary review, 4 secondary review, 3 discussant reviews)	
<b><i>NIH-NIAMS ZRG1 F10B Study Section - NRSA Fellowships</i></b>	March 2011
Special Emphasis Grants Review Committee (2 primary review, 3 secondary review, 4 discussant reviews)	
<b><i>NIH-NIAMS ZRG1 F10B Study Section - NRSA Fellowships</i></b>	November 2010
Special Emphasis Grants Review Committee (1 primary review, 1 secondary review, 2 discussant reviews)	
<b><i>NIH-NIAMS AMS 1 - Arthritis and Musculoskeletal and Skin Diseases</i></b>	October 2007
Special Emphasis Grants Review Committee (1 primary review, 1 secondary review, 2 discussant reviews)	
<b><i>National Athletic Trainers' Association - Research and Education Foundation</i></b>	2000-Present
<b><i>University of Florida - Doctoral Student Grant Proposal</i></b>	2000

**Book Reviewer**

<b><i>Human Kinetics Publishers</i></b>	March 2001
Delforge, G. <u>Sports Injury Management: A Problem-Solving Approach</u> . Human Kinetics: Champaign, IL	

**Athletic Training Service**

<b><i>Area Medical Coordinator</i></b>	
<i>United States Olympic Festival</i>	Los Angeles, July 1991
<b><i>Athletic Trainer</i></b>	
<i>USA Track and Field vs. Great Britain</i>	Edinburgh Scotland; June 1993
<i>Sunkist Indoor Track Meet</i>	Los Angeles; California 1985 - 1993
<i>PAC - 10 Women's Basketball All-Star Tour</i>	Belgium & France; August 1992
<i>Volvo Men's Professional Tennis Tournament</i>	Los Angeles; August 1990 & 1991
<i>World Cup / ADT London Marathon</i>	London, England; April 1991
<i>Mobil / USA Track and Field National Championships</i>	Cerritos, California; July 1990
<i>Women's International Ekiden</i>	Yokohama, Japan; February 1990
<i>Los Angeles Times Indoor Track Meet</i>	Los Angeles, California; 1985 - 1990
<i>Games of the XXIII Olympiad</i>	Los Angeles, California; July / August 1984

**Professional Presentations – National / International**

<i>Marjorie King Research to Reality Lecture – “The Role of Knee Laxity in ACL Injury Risk: Implications for Clinical Practice”</i> – Eastern Athletic Trainers Association Annual Meeting and Clinical Symposium, Philadelphia	Jan 2017
<i>American Orthopaedic Society of Sports Medicine Annual Meeting, Orlando, FL</i>	July 2015
NATA Exchange Lecture “The Role of Knee Joint Laxity in the ACL Injury Risk Equation”	
<i>National Athletic Trainers Association 66<sup>th</sup> Annual Meeting and Clinical Symposium</i>	June 2015
“Clinical Management of Gender and Hormone Issues in Lower Extremity Injury”	
<i>American College of Sports Medicine Annual Meeting, San Diego, CA</i>	May 2015
NATA Exchange Lecture “The Role of Sex Hormones and Knee Joint Laxity in the ACL Injury Risk Equation”	
<i>FA Masterclass: Womens Sport and Exercise in Football Conference, St George Park, Great Britain</i>	Nov 2014

“Genetics and Hormonal Influences on Knee Joint Laxity and ACL Injury Risk”

- National Academy of Kinesiology Annual Meeting; Austin, TX* *Sept 2014*  
 “ACL Injury Risk in the Physically Active: Why Are Females More Susceptible?”
- National Athletic Trainers Association 65<sup>th</sup> Annual Meeting and Clinical Symposium, Indianapolis* *June 2014*  
 Featured Presentation: “Predisposition to Musculoskeletal Injury: Can We Blame our Parents - Genetic Associations with Joint Laxity and ACL Injury”  
 Distinguished Scholars Presentation: “Understanding the Role of Joint Laxity in the ACL Injury Risk Equation”
- National Athletic Trainers Association – Athletic Training Educators Conference; Dallas, TX* *Jan 2013*  
 Robert S. Behnke Keynote Address
- National Athletic Trainers Association 63<sup>rd</sup> Annual Meeting and Clinical Symposium; St Louis, MO* *June 2012*  
 Symposium: “ACL Prevention Strategies: Efficacy of Current Prevention Strategies in Decreasing Injury Vulnerability”
- National Athletic Trainers Association 63<sup>rd</sup> Annual Meeting and Clinical Symposium; St Louis, MO* *June 2012*  
 Special Topics: “NIH NRSA Fellowship Grants: Keys to Submitting a Competitive Application”
- 27<sup>th</sup> Annual Hawkeye Sports Medicine Symposium; Coralville, IA* *Dec 2011*  
 ACL Injury Prevention Strategies: How Effective Are They?  
 Update on ACL Injury Risk Factors  
 Enhancing Hamstrings Co-Activity Through Functional Training
- Special Operations Optimal Warfighter Performance Workshop; Kannapolis, NC* *August 2011*  
 Symposium: “Can You Hear Me Now? Technical Writing for the Researcher”.
- National Athletic Trainers Association 62<sup>nd</sup> Annual Meeting and Clinical Symposium; New Orleans, LA* *June 2011*  
 Symposium: “Can You Hear Me Now? Technical Writing for the Researcher”.
- National Athletic Trainers Association 61<sup>st</sup> Annual Meeting and Clinical Symposium; Philadelphia, PA* *June 2010*  
 Symposium: “PRISMA Statement” in “Guidelines for Reporting Research”.
- American Physical Therapy Association, Combined Sections Meeting; San Diego, CA* *February 2010*  
 Symposium: “ACL Injury Prevention Strategies” in “ACL Injury: A Multidisciplinary Approach to Prevention, Treatment and Assessment of Outcomes in 2010”.
- 2009 Sport Injury, Prevention and Rehabilitation International Seminar; Beijing Sport University, China* *July 2009*  
 “Theories and Findings of Hormonal Risk Factors for ACL Injury”  
 “Enhancing Hamstring Co-Activation through Functional Training”
- 2<sup>nd</sup> World Congress of Sport Injury Prevention; Tromso, Norway* *June 2008*  
 “Anatomical and Postural Contributions to Knee Injury Risk – A Relationship That Remains Poorly Understood”
- National Athletic Trainers Association 59<sup>th</sup> Annual Meeting and Clinical Symposium; St Louis, MO* *June 2008*  
 Research Forum Symposium; Effective Strategies for Grant Writing
- Research Retreat IV: ACL Injuries – The Gender Bias; Greensboro, NC* *April 2008*  
 Keynote Address: “Current Theory and Findings Related to Anatomical and Hormonal Risk Factors”
- International Olympic Committee Medical Commission Consensus Statement on ACL Injury in Female Athletes; Lausanne, Switzerland* *February 2008*  
 “ACL Biology and Physiology”  
 “Thigh Muscle Function and ACL Injury”
- National Athletic Trainers Association 58<sup>th</sup> Annual Meeting and Clinical Symposium; Anaheim, CA* *June 2007*  
 Symposium; Cycling Sex Hormones: Is There a Connection with ACL Injury?  
 “Defining Menstrual Cycle Phase: The Ultimate Challenge” and “Cyclic Changes in Knee Laxity and Stiffness”  
 Knee Special Interest Group: “Role of Thigh Muscles in Knee Stability” with T. Blackburn, PhD, ATC
- Oslo Sports Trauma and Research Center, Norwegian School of Sports Sciences; Oslo Norway* *May 2007*  
 “Sex Differences in Lower Extremity Anatomy and Posture, Implications for ACL Injury”
- University of Michigan Sports Injury Prevention Center; Ann Arbor Michigan* *May, 2007*  
 “ACL Injuries: What do We Still Need to Know in Order to Prevent Them?”
- International Sports Medicine Conference; University of Vermont* *October 2006*  
 “Sex Hormones, Knee Laxity and ACL Injury Risks”  
 “Sex Differences in Posture: Implications for Injury”  
 “Management of Lower Extremity Postural Malalignment”

- “Role of Proprioception in Injury and Rehabilitation”  
 “Enhancing Hamstring Co-Activation through Functional Training”  
*American College of Sports Medicine Annual Meeting; Denver, CO* June 2006  
*Clinical Colloquium: “Sex Hormones and Anterior Cruciate Ligament Injury and Biology”*
- National Athletic Trainers’ Association 55<sup>th</sup> Annual Meeting and Clinical Symposium; Baltimore, MD* June, 2004  
*Symposium: “Advances in ACL Management; Influence of Sex Hormones on Knee Joint Function”*
- American Medical Society of Sports Medicine; Vancouver, British Columbia* April, 2004  
*NATA Research Lecture Exchange; “ACL Injury in the Female Athlete: Assessment of Neuromuscular Risk Factors”*
- National Athletic Trainers’ Association 54<sup>th</sup> Annual Meeting and Clinical Symposium; StLouis, MO* June, 2003  
*Distinguished Scholars Session; Freddie H. Fu, MD New Investigator Award Presentation, “ACL Injury in the Female Athlete: Assessment of Neuromuscular Risk Factors”*
- National Athletic Trainers’ Association 53<sup>rd</sup> Annual Meeting and Clinical Symposium; Dallas, TX* June, 2002  
*Researcher’s Forum: “Quantification of Muscle Function - Electromyography”*
- American College of Sports Medicine Annual Meeting; St.Louis, MO* May 2002  
*Mini-Symposium: “Update on ACL Injuries in the Female Athlete: Anatomical Risk Factors in ACL Injury”*
- American College of Sports Medicine Annual Meeting; St. Louis, MO* May 2002  
*Mini-Symposium: “Proprioception: Mechanisms and Measurement”*  
 “Factors Influencing Reactive Neuromuscular Responses Following Lower Extremity Perturbation”
- 16<sup>th</sup> Annual Hawkeye Sports Medicine Symposium and University of Iowa Inaugural Orthopaedic Sports Medicine Society Meeting for Orthopaedic Surgeons; Iowa City, IA* December 2000  
 "ACL Injuries in Female Athletes: Assessment of Risk Factors" &  
 "Role of Hamstring Co-Activation in Preventing and Rehabilitating ACL Injuries.
- National Athletic Trainers’ Association 51<sup>st</sup> Annual Meeting and Clinical Symposium; Nashville, TN* June 2000  
 “Enhancing Hamstring Co-Activity and Functional Knee Stability Through Training” (Workshop)
- National Athletic Trainers’ Association 51<sup>st</sup> Annual Meeting and Clinical Symposium; Nashville, TN* June 2000  
 Specialty Day Symposium sponsored by the College and University Athletic Trainers Committee:  
 "Recommendations and Guidelines for Appropriate Medical Coverage in Intercollegiate Athletics"
- American College of Sports Medicine Annual Meeting; Indianapolis, IN* May 2000  
 "Recommendations and Guidelines for Appropriate Medical Coverage in Intercollegiate Athletics"
- American Medical Society for Sports Medicine Annual Meeting; San Diego, CA* April 2000  
 "Recommendations and Guidelines for Appropriate Medical Coverage in Intercollegiate Athletics"
- National Association of Intercollegiate Athletics Annual Meeting* October 1999  
 "Appropriate Medical Coverage in Intercollegiate Athletics"
- National Athletic Trainers’ Association 50<sup>th</sup> Annual Meeting & Clinical Symposium; Kansas City, MO* June 1999  
 “Enhancing Hamstring Co-Activity and Functional Knee Stability Through Training” (Workshop)
- American College of Sports Medicine 46<sup>th</sup> Annual Meeting; Seattle, WA* June 1999  
 Symposium on Anterior Cruciate Ligament Injury in the Female Athlete: “Gender Differences in Neuromuscular Response Characteristics Following Knee Perturbation in a Functional Weight Bearing Stance”
- NATA Annual Meeting and Clinical Symposia; Baltimore, MD* June 1998  
 “The Role of Dynamic Stability in Preventing Knee Ligament Injury: A Comparison of Neuromuscular Response Characteristics in Males and Females”
- NATA Annual Meeting and Clinical Symposia; Orlando, FL* June 1996  
 "Use of Sport Cord in Exercise and Rehabilitation"

### Professional Presentations - Regional / State / Local

- United States Military Academy – West Point, NY* October 2017  
 “The Role of Knee Joint Laxity in ACL Injury Risk: Implications for Future Research and Clinical Practice
- Marquette University – Clinical Translational Research Program* April 2015  
 “The Role of Knee Joint Laxity in the ACL Injury Risk Equation”

<i>Girls and Women in Sports Conference, Greensboro, NC</i>	<i>October 2013</i>
Female Athletes and Injury: Prevention, Treatment and Recovery "An Update on ACL Injury Risk Factors: Implications for Prevention."	
<i>40<sup>th</sup> Annual Arts and Sciences of Sports Medicine; University of Virginia, Charlottesville, VA</i>	<i>June 2012</i>
"Understanding the Role of Joint Laxity in the ACL Injury Risk Equation"	
<i>University of Vermont</i>	<i>May 2009</i>
"Implications of Hormone Mediated Knee Laxity on Knee Joint Neuromechanics"	
<i>Mid-Atlantic Athletic Trainers Association Annual Meeting, Virginia Beach, VA</i>	<i>May 2009</i>
Keynote Address: Hormonal Influences in ACL Injury – From Research to Reality	
<i>University of Michigan Bone and Joint Injury Prevention Center</i>	<i>November 2008</i>
"ACL Injury Risk in Female Athletes: Role of Anatomy and Hormones"	
<i>35<sup>th</sup> Annual Art and Science of Sports Medicine Symposium; University of Virginia, Charlottesville</i>	<i>June 2008</i>
"The Gender Bias in ACL Injuries: Current Concepts" and "Enhancing Hamstring Co-Activation Through Functional Training"	
<i>UNC/UNCG/Duke Universities Human Movement Science Research Symposium, Chapel Hill, NC</i>	<i>February 2008</i>
Keynote Address: "Shaping a Career Path: What I have Learned Through My Experiences"	
<i>United States Army Research Internal and Environmental Medicine Center, Nantucket, MA</i>	<i>January 2008</i>
"Risk Factors for ACL Injury: What Do We Still Need to Know in Order to Prevent Them"	
<i>2002 University of Virginia General Clinical Research Center Scientific Symposium; Charlottesville</i>	<i>Oct 2002</i>
"Gender, Hormones and Anterior Cruciate Ligament Compliance"	
<i>The Distinguished Lecture Series in Sports Medicine; Hope College, Holland MI</i>	<i>November 2002</i>
"Strategies for Preventing Knee Injuries in Female Athletes"	
<i>29<sup>th</sup> Annual Art and Science of Sports Medicine Symposium; University of Virginia, Charlottesville</i>	<i>June 2002</i>
"Current Trends and the Gender Bias of ACL Injury"	
<i>Mid-Atlantic Athletic Trainers Association Annual Meeting; Virginia Beach, VA</i>	<i>May 2002</i>
"Implementation Strategies for Containing the Cost of Appropriate Medical Coverage"	
<i>Sports Medicine Expo; "Intra-Articular Tibio-Femoral Injuries in the Athlete"</i>	<i>April 2002</i>
<i>Middle Tennessee State University; Murfreesboro, TN</i>	
"Current Status of ACL Injuries in Female Athletes"	
<i>South Eastern Athletic Trainers Association Annual Meeting; Atlanta, GA</i>	<i>March 2002</i>
"Implementation Strategies for Containing the Cost of Appropriate Medical Coverage"	
<i>Virginia Horne Henry Lecture Series; University of Wisconsin, Madison WI</i>	<i>March 2002</i>
"Anterior Cruciate Ligament Injury in the Female Athlete: Assessment of Neuromuscular Risk Factors"	
<i>Southwest Athletic Trainers' Association Annual Meeting – Arlington, TX</i>	<i>July 2001</i>
"Update on Implementation of NATA Recommendations and Guidelines for Appropriate Medical Coverage in Intercollegiate Athletics"	
<i>Missouri Valley Conference Athletic Directors Educational Forum - Bronson, MO</i>	<i>May 2001</i>
"Review and Implementation Strategies of NATA Recommendations and Guidelines for Appropriate Medical Coverage in Intercollegiate Athletics"	
<i>Mid Atlantic Athletic Trainers' Association Annual Meeting - Greenville, SC</i>	<i>May 2001</i>
"Update on Implementation of NATA Recommendations and Guidelines for Appropriate Medical Coverage in Intercollegiate Athletics"	
<i>Pennsylvania State University Department of Kinesiology's Colloquium Series - State College, PA</i>	<i>March 2001</i>
"Neuromuscular Contributions to ACL Injury in the Female Athlete"	
<i>Pennsylvania State University Dept of Kinesiology's Student Athletic Training Club - State College, PA</i>	<i>March 2001</i>
"Professional Issues in Athletic Training"	
<i>South Eastern Athletic Trainers' Association Annual Meeting - Atlanta, GA,</i>	<i>March 2000</i>
"Update on Implementation of NATA Recommendations and Guidelines for Appropriate Medical Coverage in Intercollegiate Athletics"	

<i>Southwest Athletic Trainers' Association; Arlington, TX</i>	<i>July 2000</i>
"Recommendations and Guidelines for Appropriate Medical Coverage in Intercollegiate Athletics"	
<i>Mid Atlantic Athletic Trainers' Association Annual Meeting; Greenville, SC</i>	<i>May 2000</i>
"Recommendations and Guidelines for Appropriate Medical Coverage in Intercollegiate Athletics"	
<i>Mid Atlantic Athletic Trainers' Association Annual Meeting; Greenville, SC</i>	<i>May 2000</i>
"Anterior Cruciate Ligament Injury in the Female Athlete: Assessment of Risk Factors"	
<i>South Eastern Athletic Trainers' Association Annual Meeting</i>	<i>March 2000</i>
"Recommendations and Guidelines for Appropriate Medical Coverage in Intercollegiate Athletics"	
<i>University of Virginia 26th Annual Arts and Science of Sports Medicine Conference</i>	<i>June 1999</i>
"Anterior Cruciate Ligament Injury in the Female Athlete: Assessment of Risk Factors"	
<i>Joint Gait Lab / Sports Medicine Research Laboratories Neuromechanics Seminar; Univ. of Virginia</i>	<i>December 1998</i>
"Assessing Neuromuscular Response Characteristics at the Knee Following Perturbation in a Weight Bearing Stance"	
<i>FWATA Annual Meeting and Clinical Symposia; Honolulu, HI</i>	<i>July 1998</i>
"Neuromuscular Response Characteristics Following Knee Perturbation"	
<i>The Art and Science of Sports Medicine Post Graduate Course; University of Virginia</i>	<i>June 1997</i>
"Overtraining in Athletics: Recognition and Prevention"	
<i>UCLA Extension: Japanese Sport Institute and Apple Sport College - Summer Intensive Program for Fitness Instructors; Los Angeles, CA</i>	<i>Summer 1994 &amp; 1995</i>
"Prevention and Care of Athletic Related Injuries"	
"Reconditioning of Athletic Related Injuries"	
"Supportive Taping and Bracing Workshop"	
<i>UCLA Extension: ACSM Review Course; Los Angeles, CA</i>	<i>March 1994</i>
"Emergency Procedures, Prevention & Recognition of Injuries and Low Back Care"	
<i>UCLA 8th Annual Sports Medicine Symposium; Los Angeles, CA</i>	<i>May 1993</i>
"Functional Training of the Shoulder Complex"	
<i>AAF / CIF Coaches Educational Program; Los Angeles, CA</i>	<i>August 1991</i>
"Care and Prevention of Track and Field Injuries"	
<i>TRACC Sport Medicine 7th Anniversary Seminar on Women in Sport; Los Angeles, CA</i>	<i>October 1989</i>
"Strength Training: Developing a Program to Fit Your Needs"	
<i>AFAA Specialty Workshop on Low Weight / Low Impact Aerobics; Los Angeles, CA</i>	<i>September 1986</i>
"Principles of Strength Training"	
<i>Judi Garman's Softball Clinic For Coaches; Fullerton, CA</i>	<i>January 1985</i>
"Problems Particular to the Female Athlete"	
<i>California State University, Fullerton: Upper Division Athletic Training Courses</i>	<i>Fall 1983</i>
"Anorexia and Bulimia in Athletics"	

### **Conference / Symposium / Workshop Participant**

<i>Moderator, Free Communications Session</i>	
National Athletic Trainers' Association Annual Meeting and Clinical Symposium, New Orleans, LA	<i>June 2018</i>
<i>Moderator, Free Communications Session</i>	
National Athletic Trainers' Association Annual Meeting and Clinical Symposium, Houston, TX	<i>June 2017</i>
<i>Moderator, Free Communications Session</i>	<i>June 2009</i>
National Athletic Trainers' Association Annual Meeting and Clinical Symposium, San Antonio, TX	
<i>Moderator, Free Communications Session</i>	<i>July 2008</i>
2 <sup>nd</sup> World Congress of Sport Injury Prevention, Tromso, Norway	
<i>Moderator, Free Communications Session "ACL Injury Risk Factors"</i>	<i>June 2008</i>
National Athletic Trainers' Association Annual Meeting and Clinical Symposium, St Louis, MO	
<i>Participant, Site Visitor Workshop</i>	<i>June 2004</i>
Joint Review Committee for Athletic Training Programs; Baltimore, MD	

- Moderator & Lead Discussant, ACL Injuries – The Gender Bias Research Retreat II.* April 2003  
Moderated the session on Hormonal Factors, Assisted with writing of the consensus statement for Neuromuscular Factors; Lexington, KY
- Participant, Faculty Grant Writing Workshop* September 2002 – June 2003  
University of North Carolina at Greensboro, Greensboro, NC
- Moderator, “Advance Track: Management of Acute Illness in the Athletic Training Room”* June, 2002  
National Athletic Trainers' Association Annual Meeting and Clinical Symposium, Dallas, TX
- Moderator, "Update on ACL Injury Risk Factors and Prevention Strategies in the Female Athlete"* June, 2001  
National Athletic Trainers' Association Annual Meeting and Clinical Symposium, Los Angeles, CA
- Moderator, J&J Symposium: "Valgus Overload Injury Continuum of the Elbow"* June, 2001  
National Athletic Trainers' Association Annual Meeting and Clinical Symposium, Los Angeles, CA

### Media Interviews

- WXII Channel 9 “Who Wants to Know”* July 2008  
ACL Injury Prevention in Females
- WFMY Channel 2 “Who Wants to Know”* July 2008  
ACL Injury Prevention in Females
- NY Times Magazine* May 11, 2008  
“Uneven Playing Field” by Mike Sokolov
- Wake Forrest University (WFDD) Voices and Viewpoints with Denise Franklin* October 2006  
Radio interview highlighting recent NIH Grant award.
- UNCG Research Magazine; University of North Carolina Greensboro* May 2004  
“Staying in the Game”; An article highlighting the research of Drs. Shultz and Perrin on ACL Injuries in Females
- With Good Reason; Virginia Radio Broadcast –Charlottesville, VA* February 2002  
“Shaky Knees and Pain”; Discussing risk factors and care of knee injuries in females
- Training and Conditioning Journal* October 2001  
“Unreasonable Expectations” Article addressing Appropriate Medical Coverage in Intercollegiate Athletics
- Virginia Radio Network; Charlottesville VA* December 2000  
Radio Interview Discussing Current Research in Assessment of ACL Injury Risk in Females
- Inside UVA* December 1, 2000  
Interview for feature article "When Women Get Physical, Knees Take the Brunt of It", highlighting Perrin DH and Shultz SJ research and funding of ACL injury risk factors in the female athlete
- Daily Progress; Regional and State Section* December 1, 2000  
Interview for feature article "UVa Receives \$275,000 grant to study knee injuries in women"
- WWKY.790 Radio Talk Show; Louisville, KY* December 1996  
Guest on "Active Lifestyles", Hosted by David Conrad

### HONORS and AWARDS

#### National

- 2015 Hall of Fame; National Athletic Trainers’ Association (Inducted June 2015)*
- 2014 Medal for Distinguished Athletic Training Research; National Athletic Trainers’ Association*
- 2013 Fellow, National Academy of Kinesiology*
- 2012 Sayer “Bud” Miller Distinguished Educator Award; National Athletic Trainers’ Association*
- 2008 Fellow (FACSM); American College of Sports Medicine*
- 2008 Fellow (FNATA); National Athletic Trainers’ Association*
- 2005 Most Distinguished Athletic Trainer Award; National Athletic Trainers’ Association*

2003 *Freddie H. Fu, MD New Investigator Award*; National Athletic Trainers' Association Research & Education Foundation

2001 *Journal of Athletic Training Kenneth L. Knight Award for the Outstanding Research Manuscript*: "Neuromuscular Response Characteristics in Men and Women after Knee Perturbation in a Single-leg, Weight-bearing Stance"

### **Regional**

*National Athletic Trainers' Association Special Recognition Award, April 2001*; For service to the profession of athletic training and the Far West Athletic Trainers' Association

### **Local**

2014 *HHS Excellence in Research*; School of Health and Human Sciences, Univ. of North Carolina at Greensboro

2008 *HHP Excellence in Research*; School of Health and Human Performance, Univ. North Carolina at Greensboro

2005 *Gail A. Hennis Graduate Teaching Award*; School of Health and Human Performance, University of North Carolina at Greensboro.

2005 *University Research Excellence Award*; University of North Carolina at Greensboro

2005 *Summer Excellence Award*; University of North Carolina at Greensboro

2001 *Summer Teaching Enhancement Award*; University of Virginia

1999 *Mosaic Technologies Doctoral Student Award*; University of Virginia