

# CHRISTOPHER A. BAILEY, PHD, CSCS\*D, RSCC

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University of North Texas  
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## EDUCATION

### Ph.D. in Sport Physiology and Performance

2014

East Tennessee State University

Dissertation Reference: "Force Production Symmetry During Static, Isometric, and Dynamic Tasks" (2014). *Electronic Theses and Dissertations*. Paper 2388. <http://dc.etsu.edu/etd/2388>  
Dissertation Committee: Kimitake Sato (Chair), Michael H. Stone, William A. Sands, Angus Burnett

### M.Ed. in Kinesiology

2009

Georgia College and State University

Concentration: Human Performance

Thesis: "Physiological and metabolic responses associated with the Battling Ropes training system"

Thesis Committee: Mike Martino (Chair), Chris Black, Scott Butler

### B.S. in Health Education

2006

Georgia College and State University

Concentration: Exercise Science

## PROFESSIONAL EXPERIENCE

- Clinical Assistant Professor University of North Texas KHPR (2018 – present)
- Assistant Professor LaGrange College Department of Exercise Science (2014 - 2018)
- LaGrange College Exercise Science Interim Department Chair (2017 - 2018)
- LaGrange College Strength and Conditioning Graduate Program Coordinator (2016 - 2018)
- Sport/Data Scientist EZ-Monitoring, LLC (2016 - )
- Coordinator of LaGrange College SPEED Center (2014 - 2016)
- NSCA Georgia State Director (2015 - 2018)
- ETSU Baseball Strength and Conditioning Coach and Sport Scientist (2011-2014)
- NSCA Tennessee State Director (2013-2014)
- Southeast Regional NSCA Advisory Board Member (2013-2014)
- San Diego Padres Minor League Strength and Conditioning Coach (2010 - 2011)  
2010 Season with the Eugene Emeralds 2011 Season with the San Antonio Missions

- Georgia College & State Univ. Grad. Asst. Strength & Conditioning Coach (2007-2009)
- Sports Fitness Experience (SFX) Sports Performance Coach (2007)
- Quality Sports Training (QST) Sports Performance Coach (2006)
- BodyPlex Fitness and Fitness Plus personal trainer (2005-2009)

## TEACHING EXPERIENCE

### University of North Texas

#### -Clinical Assistant Professor

- KINE 2010, Fundamentals of Strength and Conditioning, Fall 2019 (multiple sections)
- KINE 3050, Biomechanics, Fall 2019 (Hybrid)
- KINE 4310, Advanced Strength and Conditioning, Fall 2019
- KINE 3050, Biomechanics, May 2019 (Hybrid)
- KINE 5150, Quantitative Procedures in Exercise and Sport Sciences, Spring 2019
- KINE 4320, Exercise Testing and Prescription, Spring 2019
- KINE 2010, Fundamentals of Strength and Conditioning, Spring 2019 (multiple sections)
- KINE 2010, Fundamentals of Strength and Conditioning, Fall 2018
- KINE 4050, Quantitative Analysis in Kinesiology, Fall 2018
- KINE 4320, Exercise Testing and Prescription, Fall 2018
- KINE 5290, Special Topics in Exercise Physiology: Monitoring Athlete Performance, Fall 2018

### LaGrange College

#### -Assistant Professor

- EXCS 2200, Medical Terminology, Spring 2018 (Online)
- EXCS 5360, Research Design, Spring 2018
- EXCS 5613, S&C Practicum IV, Spring 2018
- EXCS 6495, Directed Study: Sports Biomechanics, Spring 2018
- EXCS 6900, S&C Thesis, Spring 2018
- EXCS 6330, Athlete Monitoring, January 2018 (Online)
- EXCS 6330, Athlete Monitoring, Fall 2017
- EXCS 6310, Sport Biomechanics, Fall 2017
- EXCS 6310, Sport Biomechanics, Fall 2017 (Online)
- EXCS 5360, Research Design in S&C, Summer 2017 (Online)
- EXCS 3354, Applied Exercise Anatomy, Summer 2017 (Online)
- EXCS 5360, Research Design in S&C, Spring 2017
- EXCS 4310, Biomechanics of Sport and Exercise, Spring 2017
- EXCS 4380, Senior Seminar in Exercise Science, Spring 2017
- INTM 3515, Baseball's Influence on World History, JTerm 2017 (Online)
- EXCS 6330, Techniques and Methods for Athlete Monitoring, Fall 2016
- EXCS 6330, Techniques and Methods for Athlete Monitoring, Fall 2016 (Online)
- EXCS 3354, Applied Exercise Anatomy, Fall 2016
- EXCS 4360, Research in Exercise Science, Fall 2016
- PEDU 1122, Weight Training, Fall 2016
- EXCS 4330, Techniques in Human Performance Assessment, Fall 2016
- EXCS 4310, Biomechanics of Sport and Exercise, Spring 2016
- EXCS 4312, Theories and Principles in Athletic Conditioning, Spring 2016

- EXCS 4380, Senior Seminar in Exercise Science, Spring 2016
- EXCS 4330, Techniques in Human Performance Assessment, Spring 2016
- EXCS 4495, Ind. Study in Exercise Sci.: Ground Reaction Force Analysis in Football, Spring 2016
- PEDU 1122, Weight Training, Spring 2016
- INTM 3501, Personal Trainer Certification Prep, Interim 2016 (Online)
- EXCS 3354, Applied Exercise Anatomy, Fall 2015
- EXCS 4360, Research in Exercise Science, Fall 2015
- EXCS 2000, Introduction to Exercise Science, Fall 2015
- PEDU 1122, Weight Training, Fall 2015
- EXCS 4310, Biomechanics of Sport and Exercise, Spring 2015
- EXCS 4312, Theories and Principles in Athletic Conditioning, Spring 2015
- EXCS 4380, Senior Seminar in Exercise Science, Spring 2015
- EXCS 4495, Ind. Study in Ex Sci.: Evaluating & Predicting Base Stealing Performance, Fall 2014
- EXCS 3354, Applied Exercise Anatomy, Fall 2014
- EXCS 3354L, Applied Exercise Anatomy Lab, Fall 2014
- EXCS 4330, Techniques in Human Performance Assessment, Fall 2014
- EXCS 4360, Research in Exercise Science, Fall 2014

### **East Tennessee State University**

#### **-Lecturer**

- PEXS 3032, Psychomotor Development, Summer 2013 (Online)
- PEXS 4270, Structural Kinesiology, Spring 2013
- PEXS 4061, Exercise and Fitness Testing, Fall 2012
- PHED 1180, Wellness for Life, Spring 2012
- PHED 1180, Wellness for Life, Fall 2011

#### **-Guest Lecturer**

- PEXS 4270, Structural Kinesiology, Spring 2014
- PEXS 7000, Research Design and Statistics in Sport Science, Fall 2013
- PEXS 4270, Structural Kinesiology, Fall 2013
- PEXS 4270, Structural Kinesiology, Fall 2012

#### **-Teaching Assistant**

- PEXS 4061, Exercise Fitness Testing, Summer 2012
- PEXS 4270, Structural Kinesiology, Summer 2012

### **Georgia College and State University**

#### **-Guest Lecturer**

- KINS 6613, Methods of Human Performance Programs I, Spring 2008
- KINS 4203, Exercise Prescription for Normal and Special Populations, Spring 2008
- KINS 3223, Biomechanics of Sport and Exercise, Spring 2009

#### **-Teaching Assistant**

- KINS 3262, Exercise Testing for Normal and Special Populations (lab), Fall 2008

### **NSCA (Exam Prep Live)**

- Biomechanics (2016)
- Testing & Evaluation (2016)
- Warm-up & Flexibility, Aerobic Training Modalities (2016)

## COURSE DEVELOPMENT

### University of North Texas

Generated course curriculum, learning objectives and assessments

- KINE 4310, Advanced Strength and Conditioning, Fall 2019
- KINE 5150, Quantitative Procedures in Kinesiology and Sport Science, Spring 2019
- KINE 4050, Quantitative Analysis in Kinesiology, Fall 2018
- KINE 4320, Exercise Testing and Prescription, Fall 2018
- KINE 2010, Fundamentals of Strength and Conditioning, Fall 2018
- KINE 5290, Special Topics in Exercise Physiology: Monitoring Athlete Performance, Fall 2018

### LaGrange College

Generated course curriculum, learning objectives and assessments

- EXCS 6310, Sport Biomechanics (graduate)
- EXCS 6310, Sport Biomechanics (graduate) (online)
- EXCS 5360, Research Design in S&C (graduate)
- EXCS 5360, Research Design in S&C (graduate) (online)
- EXCS 6330, Techniques and Methods for Athlete Monitoring, (graduate)
- EXCS 6330, Techniques and Methods for Athlete Monitoring (graduate) (online)
- INTM 3515, Baseball's Influence on World History (online)
- EXCS 3354, Applied Exercise Anatomy (online)
- INTM 3501, Personal Training Certification Prep (online)(hybrid)
- EXCS 4312, Theories and Principles in Athletic Conditioning
- EXCS 4310, Biomechanics
- EXCS 4380, Senior Seminar in Exercise Science
- EXCS 3354, Applied Exercise Anatomy
- EXCS 4360, Research Design
- EXCS 4330, Techniques for Human Performance Assessment

### East Tennessee State University

- PEXS 3032, Psychomotor Development, Summer 2013: developed and adapted course material to be delivered as an online course
- PEXS 5600, Sport Conditioning, Fall 2013: Adapted course material to be delivered as an online course
- PEXS 5610, Sport Physiology I: Muscle Metabolism and Hormonal Control, Fall 2013: Adapted course material to be delivered as an online course

## AWARDS/FUNDING

- **Bailey, CA.** "Longitudinal monitoring of lean body mass and bone density and associations with workloads in NCAA Division I basketball players." *NSCA Young Investigator Grant (\$22,917.55) (2019 not funded)*.
- **Bailey, CA.** UNT Faculty First Flight Grant Funded by the Center for Learning, Experimentation, Application, and Research (CLEAR) (\$1,000).

- **Bailey, CA.** "Monitoring of Velocity Based Strength Straining." LaGrange College Summer Research Grant (2017) (\$2,891.40) (*not funded*).
- **Bailey, CA.** "Validation of Velocity Based Strength Straining Measurement via an Inertial Measurement Unit." LaGrange College Summer Research Grant (\$2,939.64) (*not funded*).
- **Bailey, CA,** Sato, K, Burnett, A, and Stone, MH. "Kinetic asymmetry and center of mass displacement during jumps." *Proceedings of the International Society of Biomechanics in Sports (ISBS) annual conference*, Poitiers, France 2015. & **Bailey, CA.** *Optimal Loading and Performance During Strength Training Symposium*. Swiss Federal Institute of Technology in Zurich (ETH Zurich). Zurich, Switzerland 2015. Funded by LaGrange College Summer Research Grant (\$2,925).
- **Bailey, CA,** McInnis, TC, Sato, K, Johnston, BD, Sha, ZX, and Stone, MH. "Is a 20 kg load sufficient to simulate fatigue in squat jumps?" *Presentation at The 9<sup>th</sup> Annual Coaches and Sport Science College*, Johnson City, TN, 5-6, 2014. \$319.95 travel grant from the LaGrange College Academic Services Committee.
- Bricker, JC, **Bailey, CA,** Driggers, A, McInnis, TC, and Alami, A. "Reliability of a novel method for evaluating and predicting base stealing performance." John R. Hines, Jr. Undergraduate Research Award winner for Applied Science
- Bricker, JC, **Bailey, CA,** Driggers, A, McInnis, TC, and Alami, A. "Reliability of a novel method for evaluating and predicting base stealing performance." *Presentation at The 9<sup>th</sup> Annual Coaches and Sport Science College*, Johnson City, TN, 5-6, 2014. \$500 student travel grant from the LaGrange College Academic Services Committee.
- **Bailey, C,** Sato, K, Johnston, B, Sands, WA, Burnett, A, and Stone, MH. "Kinetic and kinematic asymmetries during unloaded and loaded static jumps." *Proceedings of the Eighth Annual Coaches and Sport Science College*, Johnson City, TN, 2013 (1<sup>st</sup> Place award winner for Sport Science) (\$100)
- 2013 International Society of Biomechanics in Sport (ISBS) Student Travel Grant Award, Tapei, Taiwan (Extramural) – 500 Euro (\$645.04 USD)
- Student Travel Scholarship (East Tennessee State University - Intramural) ISBS 2013 (\$816.50)
- Student Travel Scholarship (East Tennessee State University - Intramural) ACSM 2013 (\$387.63)
- Hornsby, WG, **Bailey, CA,** Chiang, CY, Johnston, BJ, Gentles, J, and Stone, MH. "Relationship between isometric force characteristics and hitting performance in NCAA Division I baseball players." *Sixth Annual Coaches and Sport Science College*, Johnson City, TN 2011.) (1<sup>st</sup> Place award winner for Sport Science)(\$150)
- Georgia College and State University "Outstanding Graduate Student in Human Performance" (2008-2009)
- Georgia College and State University "Outstanding Graduate Student in Kinesiology" (2007-2008)
- Georgia College and State University "Outstanding Senior in Exercise Science" (2005-2006)

## PEER REVIEWED PUBLICATIONS

### Articles

1. **Bailey, CA.** "Longitudinal Monitoring of Athletes: Statistical Issues and Best Practices." *Journal of Science in Sport & Exercise* (ePub ahead of print, <https://doi.org/10.1007/s42978-019-00042-4>) 2019.
2. Beckham, G, Suchomel, T, Sole, C, **Bailey, CA**, Grazer, J, Talbot, K, Kim, S & Stone, MH. "Influence of Sex and Maximum Strength on Reactive Strength Index-modified." *J Sport Sci Med*, 18(1):65-72, 2019.
3. Driggers, A, Bingham, G, **Bailey, CA.** "The relationship of throwing arm mechanics and elbow varus torque: Letter to the Editor." *American Journal of Sports Medicine* 47(1), 2018.
4. **Bailey, CA**, McInnis, TC, and Batchner, JJ. "Bat Swing Mechanical Analysis with an Inertial Measurement Unit: Reliability and Implications for Athlete Monitoring." *Journal of Trainology*, 5(2), 42-44, 2016.
5. Bricker, JC, **Bailey, CA**, Driggers, A, McInnis, TC, and Alami, A. "A new method for evaluating and predicting base stealing performance." *Journal of Strength and Conditioning Research*, 30(11), 3044:3050, 2016.
6. **Bailey, CA**, Sato, K, Sands, WA, Burnett, A, and Stone, MH. "Carry-over of force production symmetry in athletes of differing strength levels" *Journal of Strength and Conditioning Research*. 29(11), 3188-3196, 2015.
7. **Bailey, CA**, Sato, K, Burnett, A, and Stone, MH. "Force production asymmetry in male and female athletes of differing strength levels." *International Journal of Sport Physiology and Performance*. 10(4), 504-508, 2015.
8. Suchomel, TJ, Sole, CJ, **Bailey, CA**, Grazer, JL, and Beckham, GK. "A comparison of reactive strength index-modified between six U.S. collegiate athletic teams." *Journal of Strength and Conditioning Research*, 29(5), 1310-1316, 2015.
9. Suchomel, TJ, **Bailey, CA**, Sole, CJ, Grazer, JL, and Beckham, GK. "Using reactive strength index-modified as an explosive measurement tool in Division I athletes." *Journal of Strength and Conditioning Research*, 29(4), 899-904, 2015.
10. Suchomel, TJ, **Bailey, CA.** "Monitoring and managing fatigue in baseball players." *Strength and Conditioning Journal*. 36(6), 39-45, 2014.
11. Bazzyler, C, **Bailey, CA**, Chiang, CY, Sato, K, Stone, MH. "The effects of strength training on isometric force production symmetry in recreational athletes." *Journal of Trainology*, 3(1), 6-10, 2014.
12. **Bailey, CA**, Sato, K, Alexander, R, Chiang, C, Stone, MH. "Isometric force production symmetry and jumping performance in college athletes." *Journal of Trainology*, 2(1), 1-5, 2013.

### Under review

1. **Bailey, CA**, McInnis, TC, Nilson, KW, Batchner, JJ, North, TR. "Asymmetry direction and magnitude appear to be dependent on task in collegiate baseball players." (submitted)

2. **Bailey, CA**, Sato, K. "Simulating fatigue in squat jumps: A preliminary investigation." (revisions submitted)

### *Works in Preparation*

1. Nilson, KW, **Bailey, CA**. "Alterations in jump performance based upon varying warm-up techniques."
2. Brown, DB, **Bailey, CA**. "Associations between tennis serve velocity and countermovement jump performance."
3. Brown, DF, Nilson, KW, Batchner, JJ, North, TR, Raszeja, NJ and **Bailey, CA**. "A comparison of explosive characteristics in NCAA Division III athletes."
4. **Bailey, CA**, McInnis, TC. "Data-Driven Development in Sport Performance."
5. **Bailey, CA**, and McInnis, TC. "Changes in explosive ground reaction force characteristics across an entire macrocycle in collegiate baseball players."

### *Published Peer Reviewed Conference Proceedings*

1. Eusufzai, R. and **Bailey, CA**. "Predicting ball exit velocity with an inertial measurement unit in collegiate baseball players." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Washington DC 2019.
2. **Bailey, CA**, McInnis, TC, Nilson, KW, Batchner, JJ, and North, T. "Bat swing ground reaction force characteristics and ball exit velocity in collegiate baseball players." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Indianapolis, IN 2018.
3. **Bailey, CA**, McInnis, TC, Nilson, KW, Batchner, JJ, North, T. "Force production asymmetry is task dependent in collegiate baseball players." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Indianapolis, IN 2018.
4. Beckham, G., Suchomel, TJ, Sole, CJ, **Bailey, CA**, Grazer, J, Kim, S, Talbot, K, and Stone, MH. "Influence of sex and maximal strength on reactive strength index-modified." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Indianapolis, IN 2018.
5. **Bailey, CA**, Driggers, AR. "Segmental multi-frequency bioelectrical impedance body composition analysis in major league baseball players: Implications for athlete monitoring." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Las Vegas, NV 2017.
6. Raszeja, N, Anderson, K, McInnis, T, **Bailey, CA**. "Ground reaction force analysis in football blocking." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Las Vegas, NV 2017.
7. Batchner, JJ, Nilson, KW, North, TR, Brown, D, Raszeja, NJ, & **Bailey, CA**. "Validation of jump performance measures assessed with field-based instruments and implications for athlete monitoring." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Las Vegas, NV 2017.

8. **Bailey, CA**, McInnis, TC, Batcher, JJ. "Utilizing an Inertial measurement unit for measuring bat swing mechanics: within and between session reliability." *Journal of Strength and Conditioning Research*, 30(s1), 137-38, 2016.
9. Batcher, JJ, Raszeja, N, Embry, TC, **Bailey, CA**. "Associations between performance measures of vertical jumping and bat swing mechanics." *Journal of Strength and Conditioning Research*, 30(s1), 15-16, 2016.
10. **Bailey, CA**, McInnis, TC, Alami, A, Ralph, R. "Better students, better athletes, better coaches: a model for increasing performance by integrating academics and athletics." Proceedings of the 10th Annual Coaches and Sport Science College, Johnson City, TN, 11-12, 2015.
11. **Bailey, CA**, Sato, K, Burnett, A, and Stone, MH. "Kinetic asymmetry and center of mass displacement during jumps." *Proceedings of the International Society of Biomechanics in Sports (ISBS) annual conference*, Poitiers, France 2015.
12. **Bailey, CA**, McInnis, TC, Sato, K, Johnston, BD, Sha, ZX, and Stone, MH. "Is a 20 kg load sufficient to simulate fatigue in squat jumps?" *Proceedings of the 9th Annual Coaches and Sport Science College*, Johnson City, TN, 5-6, 2014.
13. Bricker, JC, **Bailey, CA**, Driggers, A, McInnis, TC, and Alami, A. "Reliability of a novel method for evaluating and predicting base stealing performance." *Proceedings of the 9th Annual Coaches and Sport Science College*, Johnson City, TN, 5-6, 2014.
14. **Bailey, CA**, Bazylar, C, Chiang, CY, Sato, K, and Stone, MH. "The relationship of force production asymmetry and performance in athletes of different strength levels." *Proceedings of the International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014.
15. **Bailey, CA**, Suchomel, TJ, Beckham, GK, Sole, CJ, and Grazer, JL. "A comparison of baseball positional differences with Reactive Strength Index-modified." *Proceedings of the International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014.
16. Suchomel, TJ, **Bailey, CA**, Sole, CJ, Grazer, JL, and Beckham, GK. "The use of Reactive Strength Index-modified as an explosive performance measurement in male and female athletes." *Proceedings of the International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014. (New Investigator Award Finalist)
17. Chiang, CY, **Bailey, CA**, Sole, CJ, Suchomel, TJ, Sato, K, and Stone, MH. Leg dynamic strength predictors of a pre-planned change of direction task in Division I soccer players. *Proceedings of the International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014.
18. Sha, Z, **Bailey, CA**, McInnis, TC, Sato, K, Stone, MH. Using kinetic isometric mid-thigh pull variables to predict Division I male sprinters' 60m performance. *Proceedings of the International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014.
19. Suchomel, TJ, Sole, CJ, **Bailey, CA**, Grazer, JL, and Beckham, GK. "Reactive Strength Index-modified: A comparison between six U.S. collegiate athletic teams." *Proceedings of the International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014.



20. Beckham, GK, Suchomel, TJ, **Bailey, CA**, Sole, CJ, and Grazer, JL. "The relationship of Reactive Strength Index-modified and measures of force development in the isometric mid-thigh pull." *Proceedings of the International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014.
21. Chiang, CY, Sato, K, **Bailey, CA**, Sole, CJ, Suchomel, TJ, Alexander, RP, Sayers, AL, Sands, WA, and Stone, MH. "Is change of direction ability related to vertical jump height in female soccer players?" *ACSM Annual Conference*, Orlando, FL. 2014 *Med Sci Sports Exerc* 46(5s).
22. **Bailey, CA**, Sato, K, Johnston, B, Sands, WA, Burnett, A, and Stone, MH. "Kinetic and kinematic asymmetries during unloaded and loaded static jumps." *Proceedings of the Eighth Annual Coaches and Sport Science College*, Johnson City, TN, 8-10, 2013.
23. **Bailey, CA**, Suchomel, T, Beckham, G, McInnis, T, Driggers, A, Haun, C, Sato, K, and Stone, MH. "A comparison of baseball and softball players' bilateral strength asymmetry and its relationship with performance." *Proceedings of the Eighth Annual Coaches and Sport Science College*, Johnson City, TN, 5-7, 2013.
24. Sha, ZX, Sato, K, Stamps, H, Alexander, R, **Bailey, CA**, McInnis, T, Johnston, B, Ramsey, MW, Stone, ME, and Stone, MH. "Relationships of sprint intervals to 60 m sprint performance in NCAA Division I sprinters: an exploratory study." *Proceedings of the Eighth Annual Coaches and Sport Science College*, Johnson City, TN, 25-27, 2013.
25. Beckham, G, Sato, K, Suchomel, T, Chiang, CY, Gleason, B, Sands, WA, **Bailey, CA**, Stone, MH. The application of accelerometry to weightlifting: Current challenges. *Proceedings of the Eighth Annual Coaches and Sport Science College*, Johnson City, TN, 14-16, 2013.
26. **Bailey, CA**, Sato, K, Heise, G. "Frontal plane knee displacement in barbell back squat." In: TY Shiang, WH Ho, CF Huang, and CL Tsai, eds. *Proceedings of the International Society of Biomechanics in Sports (ISBS) annual conference*, Taipei, Taiwan. Also in: *Chinese Journal of Sports Biomechanics*, 5(S1), 434-37, 2013.
27. **Bailey, CA**, Sato, K, Hornsby, WG, and Stone, MH. "Predicting offensive performance in collegiate baseball players using isometric force production characteristics." In: TY Shiang, WH Ho, CF Huang, and CL Tsai, eds. *Proceedings of the 31<sup>st</sup> International Society of Biomechanics in Sports (ISBS) annual conference*, Taipei, Taiwan. Also in: *Chinese Journal of Sports Biomechanics*, 5(S1), 448-51, 2013.
28. **Bailey, CA**, Sato, K, and Stone, MH. "Bilateral strength asymmetry and weight distribution in NCAA Division I baseball players." *Medicine and Science in Sports and Exercise*, 45 (5s), 2013.
29. Sato, K, **Bailey, CA**, Alexander, R, Mizuguchi, S, Stone, ME, Stone, MH. "Preliminary Study: Bilateral strength asymmetry characteristics of collegiate men's and women's soccer players." *International Conference on Strength Training*, Oslo, Norway 2012. *Published in ICST conference proceedings 2012*.

## PRESENTATIONS

### *Invited Presentations*

1. **Bailey, CA.** "How Can Strength Coaches Use Wireless Technology to Track and Improve Athletic Performance?" NSCA Nebraska State Clinic. College of St. Mary. Omaha, NE 2019.
2. **Bailey, CA & McInnis, TC.** "Athlete monitoring and performance analytics on a low (or no) budget." *NSCA National Conference*. Las Vegas, NV 2017.
3. **Bailey, CA & McInnis, TC.** "Athlete monitoring and performance analytics on a low (or no) budget." *NSCA Georgia State Clinic*. Armstrong State University, Savannah, GA 2016.
4. **Bailey, CA.** *Swiss Strength Training Symposium*. "Athlete monitoring throughout strength and conditioning programs." Swiss Federal Institute of Technology in Zurich (ETH Zurich). Zurich, Switzerland 2015.
5. **Bailey, CA.** *Blackhawk Strength, Speed and Agility Clinic*. (Multiple topics). Weaverville, NC 2014.
6. **Bailey, CA.** "Designing strength and conditioning programs for team sports." *Sport and Coaching Science Conference*. Taipei, Taiwan 2013.
7. **Bailey, CA.** "Assessing jump performance in tennis: Indications for tennis performance and athlete monitoring." *Integration Sport*, 2012.

### *Tutorials*

1. **Bailey, CA & McInnis, TC.** "Athlete monitoring and performance analytics 101." *20<sup>th</sup> National Coaching Conference*, Atlanta, GA 2017.
2. Sato, K & **Bailey, CA.** "Use of bilateral asymmetry tests for rehabilitation and athlete monitoring purposes." *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2017.

### *Oral Research Presentations*

1. **Bailey, CA, McInnis, TC, Nilson, KW, Batchner, JJ, and North, T.** "Bat swing ground reaction force characteristics and ball exit velocity in collegiate baseball players." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Indianapolis, IN 2018.
2. Beckham, G., Suchomel, TJ, Sole, CJ, **Bailey, CA**, Grazer, J, Kim, S, Talbot, K, and Stone, MH. "Influence of sex and maximal strength on reactive strength index-modified." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Indianapolis, IN 2018.
3. **Bailey, CA**, Sato, K, Burnett, A, and Stone, MH. "Kinetic asymmetry and center of mass displacement during jumps." *International Society of Biomechanics in Sports (ISBS) annual conference*, Poitiers, France 2015.
4. **Bailey, CA**, Bazylar, C, Chiang, CY, Sato, K, and Stone, MH. "The relationship of force production asymmetry and performance in athletes of different strength levels." *International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014.

5. Chiang, CY, **Bailey, CA**, Sole, CJ, Suchomel, TJ, Sato, K and Stone, MH. "Leg dynamic strength predictors of a pre-planned change of direction task in NCAA Division I soccer players" *International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014.
6. Sha, Z, **Bailey, CA**, McInnis, TC, Sato, K, Stone, MH. Using kinetic isometric mid-thigh pull variables to predict Division I male sprinters' 60m performance. *International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014.
7. **Bailey, CA**, Sato, K, Heise, G. "Frontal plane knee displacement in the barbell back squat." *International Society of Biomechanics in Sports (ISBS) annual conference*. Taipei, Taiwan 2013.
8. **Bailey, CA**, Sato, K, and Hornsby, WG. "Predicting offensive performance from isometric strength characteristics in NCAA Division I Baseball players." *International Society of Biomechanics in Sports (ISBS) annual conference*. Taipei, Taiwan 2013.
9. Sato, K, **Bailey, CA**, Alexander, R, Mizuguchi, S, Stone, ME, Stone, MH. "Preliminary Study: Bilateral strength asymmetry characteristics of collegiate men's and women's soccer players." *International Conference on Strength Training*, Oslo, Norway 2012.
10. **Bailey, CA**, Sato, K, Johnston, B, Sha, Z, and Stone, MH. "Isometric rate of force development and kinematic changes during weighted static jumps in collegiate baseball players." *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2014. *SEACSM 2014 was cancelled due to inclement winter weather*.
11. Gentles, JA, Johnston, BJ, Hornsby, WG, **Bailey, CA**, MacDonald, CM, and Stone, MH. "Reducing injury is not enough: It also helps to win." *Seventh Annual Coaches and Sport Science College*, Johnson City, TN 2012.
12. **Bailey, CA**, Martino, M, Black, C. "Physiological and metabolic responses associated with the Battling Ropes training system." *Georgia College and State University Research Conference*, 2009.

### *Poster Research Presentations*

1. Eusufzai, R. and **Bailey, CA**. "Predicting ball exit velocity with an inertial measurement unit in collegiate baseball players." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Washington DC 2019.
2. **Bailey, CA**, McInnis, TC, Nilson, KW, Batcher, JJ, North, T. "Force production asymmetry is task dependent in collegiate baseball players." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Indianapolis, IN 2018.
3. Joyner, CE, **Bailey, CA**. "Force production asymmetry and jumping performance in baseball players." *Southeast Regional American College of Sports Medicine Annual Meeting*, Chattanooga, TN 2018.
4. Rogers, SC, McInnis, TC, **Bailey, CA**. "Relationships between ground reaction forces during vertical jumping and baseball performance." *Southeast Regional American College of Sports Medicine Annual Meeting*, Chattanooga, TN 2018.

5. Wright, AD, McInnis, TC, **Bailey, CA**. "The effectiveness of a collegiate strength and conditioning program in NCAA Division III baseball players." *Southeast Regional American College of Sports Medicine Annual Meeting*, Chattanooga, TN 2018.
6. **Bailey, CA**, Driggers, AR. "Segmental multi-frequency bioelectrical impedance body composition analysis in major league baseball players: Implications for athlete monitoring." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Las Vegas, NV 2017.
7. Raszeja, N, Anderson, K, McInnis, T, **Bailey, CA**. "Ground reaction force analysis in football blocking." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Las Vegas, NV 2017.
8. Batcher, JJ, Nilson, KW, North, TR, Brown, D, Raszeja, NJ, & **Bailey, CA**. "Validation of jump performance measures assessed with field-based instruments and implications for athlete monitoring." *Journal of Strength and Conditioning Research*, proceedings of the NSCA National Conference, Las Vegas, NV 2017.
9. Edwards, BT, King, T, Swift, J, Theam, O, **Bailey, CA**. Reaction time as a significant measure in baseball. LaGrange College Undergraduate Research Poster Session LaGrange, GA, 2017.
10. Norman, TL, Nilson, KW, **Bailey, CA**. Coefficient of static and dynamic friction in wide receiver gloves. LaGrange College Undergraduate Research Poster Session LaGrange, GA, 2017.
11. Smyth, P, Meigs, D, Osborne, M, **Bailey, CA**. Effects of Water vs. Gatorade on Athlete Performance. LaGrange College Undergraduate Research Poster Session LaGrange, GA, 2017.
12. Young, CS, Coggins, AE, McInnis, TC, **Bailey, CA**. Similarities in jumping and weightlifting performance. LaGrange College Undergraduate Research Poster Session LaGrange, GA, 2017.
13. Lovins, KC, Cauldwell, EE., McInnis, TC, **Bailey, CA**. Change in center of pressure position at takeoff and landing as a measure of jump control in athlete Monitoring. *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2017.
14. Lewis, KD, Norman, TL, McInnis, TC, **Bailey, CA**. "The influence of weightlifting shoes on center of pressure change during the snatch and clean in novice weightlifters." *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2017.
15. Cauldwell, EE, Lovins, KC, Bellon, CR, McInnis, TC, and **Bailey, CA**. "Does the type of scaling influence the relationship between strength and jumping performance?" *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2017.
16. Marcelin, M., Morgan, CB, Bellon, CR, McInnis, TC, and **Bailey, CA**. "Distance running and jumping performance in NCAA DIII Athletes. *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2017.

17. Norman, TL, McInnis, TC, **Bailey, CA**. "Impact of early morning practice on sleep quantity in the collegiate athlete." *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2017
18. Jacobsen, K, Theam, O, Edwards, BT, Alami, A, **Bailey, CA**. "Is chronological age or training age a better predictor of performance in collegiate golf?" *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2017.
19. Coggins, AE, Young, CS, McInnis, TC and **Bailey, CA**. "Lower body power differences between positions in collegiate cheerleaders." *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2017.
20. **Bailey, CA**, McInnis, TC, Batchner, JJ. "Utilizing an inertial measurement unit for measuring bat swing mechanics: within and between session reliability." NSCA National Conference, New Orleans, LA 2016.
21. Batchner, JJ, Raszeja, N, Embry, TC, **Bailey, CA**. "Associations between performance measures of vertical jumping and bat swing mechanics." NSCA National Conference, New Orleans, LA 2016.
22. Batchner, JJ, Nilson, KW, North, TR, Brown, D, Raszeja, NJ, & **Bailey, CA**. "Validation of jump performance measures assessed with various instruments and implications for athlete monitoring." *National Strength and Conditioning Association GA State Clinic*, Savannah, GA 2016.
23. Batchner, JJ and **Bailey, CA**. "Bat swing analysis with the ZEPP Sensor." *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2016.
24. Nix, MK and **Bailey, CA**. "Associations between psychological mood states and sleep quality in NCAA Division III softball players." *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2016.
25. Scruggs, JW, Murrah, SJ, and **Bailey, CA**. "Alterations in body mass and vertical jump height throughout a collegiate baseball season." *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2016.
26. Raszeja, N, Anderson, K, McInnis, T, **Bailey, CA**. "Vertical ground reaction force analysis of football blocking." LaGrange College Undergraduate Research Poster Session LaGrange, GA, 2016.
27. Calhoun, N, **Bailey, CA**. "The Prevalence of Overuse Injuries in NCAA Division III Athletics." LaGrange College Undergraduate Research Poster Session LaGrange, GA, 2016.
28. Batchner, JJ, Raszeja, N, Embry, TC, **Bailey, CA**. "Associations Between Performance Measures of Vertical Jumping and Bat Swing Mechanics." LaGrange College Undergraduate Research Poster Session LaGrange, GA, 2016.
29. Jenkins, AE, **Bailey, CA**. "Does arm length affect arm injuries in baseball." LaGrange College Undergraduate Research Poster Session LaGrange, GA, 2016.
30. Kreulen, J, **Bailey, CA**. "Academics, athletics, exercise and sleep in college students." LaGrange College Undergraduate Research Poster Session LaGrange, GA, 2016.
31. Gravett, D, Oglesby, K, Murrah, SJ, **Bailey, CA**. "Hand arm path lengths while throwing." LaGrange College Undergraduate Research Poster Session LaGrange, GA, 2016.

32. **Bailey, CA**, McInnis, TC, Alami, A, Ralph, R. "Better students, better athletes, better coaches: a model for increasing performance by integrating academics and athletics." Proceedings of the 10th Annual Coaches and Sport Science College, Johnson City, TN, 11-12, 2015.
33. Bricker, JC, **Bailey, CA**, Driggers, A, McInnis, TC, and Alami, A. "Reliability of a novel method for evaluating and predicting base stealing performance." Proceedings of the 10th Annual Coaches and Sport Science College, Johnson City, TN, 11-12, 2015
34. **Bailey, CA**, Suchomel, TJ, Beckham, GK, Sole, CJ, and Grazer, JL. "A comparison of baseball positional differences with Reactive Strength Index-modified." *International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014.
35. Suchomel, TJ, **Bailey, CA**, Sole, CJ, Grazer, JL, and Beckham, GK. "The use of Reactive Strength Index-modified as an explosive performance measurement in male and female athletes." *International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014. (New Investigator Award Finalist)
36. Suchomel, TJ, Sole, CJ, **Bailey, CA**, Grazer, JL, and Beckham, GK. "Reactive Strength Index-modified: A comparison between six U.S. collegiate athletic teams." *International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014.
37. Beckham, GK, Suchomel, TJ, **Bailey, CA**, Sole, CJ, and Grazer, JL. "The relationship of Reactive Strength Index-modified and measures of force development in the isometric mid-thigh pull." *International Society of Biomechanics in Sports (ISBS) annual conference*, Johnson City, TN, USA 2014.
38. Chiang, CY, Sato, K, **Bailey, CA**, Sole, CJ, Suchomel, TJ, Alexander, RP, Sayers, AL, Sands, WA, and Stone, MH. "Is change of direction ability related to vertical jump height in female soccer players?" *ACSM Annual Conference*, Orlando, FL 2014.
39. Bricker, JC, **Bailey, CA**, Driggers, A, McInnis, TC, and Alami, A. "Reliability of a novel method for evaluating and predicting base stealing performance." *The 9<sup>th</sup> Annual Coaches and Sport Science College*, Johnson City, TN, 8-10, 2014.
40. **Bailey, CA**, McInnis, TC, Sato, K, Johnston, BD, Sha, ZX, and Stone, MH. "Is a 20 kg load sufficient to simulate fatigue in squat jumps?" *The 9<sup>th</sup> Annual Coaches and Sport Science College*, Johnson City, TN, 8-10, 2014.
41. Beckham, GK, Suchomel, TJ, **Bailey, CA**, Sole, CJ and Stone, MH. "The influence of sex on reactive strength index-modified (RSImod)." *33<sup>rd</sup> Annual Southwest Regional American College of Sports Medicine Annual Meeting*, Costa Mesa, California 2014.
42. **Bailey, CA**, Sato, K, and Stone, MH. "Bilateral strength asymmetry and weight distribution in NCAA Division I baseball players." *American College of Sports Medicine Annual Meeting*, Indianapolis, IN 2013.
43. **Bailey, CA**, Sato, K, Johnston, B, Sands, WA, Burnett, A, and Stone, MH. "Kinetic and kinematic asymmetries during unloaded and loaded static jumps." *Proceedings of the Eighth Annual Coaches and Sport Science College*, Johnson City, TN 2013
44. **Bailey, CA**, Suchomel, T, Beckham, G, McInnis, T, Driggers, A, Haun, C, Sato, K, and Stone, MH. "A comparison of baseball and softball players' bilateral strength asymmetry

and its relationship with performance.” *Proceedings of the Eighth Annual Coaches and Sport Science College*, Johnson City, TN 2013.

45. **Bailey, CA**, Sato, K, Alexander, RP, Chiang, CY, Gray, HS, Mizuguchi, S, and Stone, MH. “Force production symmetry in NCAA Division I soccer players.” *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2013.
46. Hornsby, WG, **Bailey, CA**, Chiang, CY, Johnston, BJ, Gentles, JA, and Stone, MH. “Relationship between isometric force characteristics and hitting performance in NCAA Division I baseball players.” *Sixth Annual Coaches and Sport Science College*, Johnson City, TN 2011.
47. **Bailey, CA**, Martino, M, Black, C, Butler, S. “Physiological and metabolic responses associated with the Battling Ropes training system.” *Southeast Regional American College of Sports Medicine Annual Meeting*, Greenville, SC 2010.

## SUPERVISED STUDENT RESEARCH

1. Coniglio, Christine (2018/ongoing) – “GPS and accelerometry derived training loads in collegiate volleyball” – (Dissertation Committee Member)
2. Norman, Luke (2018/2019) – “Bilateral Deficit in Jumping Performance of Collegiate Athletes” (Graduate Thesis Committee Member)
3. Nilson, Ken (2017/2018 – “Alterations in jump performance based upon varying warm-up techniques” (Graduate Thesis Chair/Coordinator)
4. Brown, Dale (2017/2018) – “Kinetics and kinematics of various types of tennis serve in collegiate athletes” (Graduate Thesis Chair/Coordinator)
5. Bloodworth, Ashlan, Cauldwell, Emily, Lovins, Kaitlin, and Porter, Lea Ann (2017/2018) – “Pet Therapy and Athletics: Does the presence of dogs in the weight room influence objective and subjective athlete monitoring data?” (Faculty Supervisor)
6. Joyner, Chandler (2017/2018) – “Force production asymmetry and jumping performance in baseball players” (Faculty Supervisor)
7. Rogers, Stanton (2017/2018) – “Relationships between ground reaction forces during vertical jumping and baseball performance” (Faculty Supervisor)
8. Chafin, Ashley (2017/2018) – “Body composition and performance during strength and endurance related tasks. (Faculty Supervisor)
9. Marcelin, Mackens, Morgan, Corey (2016/2017) – “Distance running and jumping performance in NCAA DIII athletes” (Faculty Supervisor)
10. Theam, Osborn, Edwards, Blakely (2016/2017) – “Is chronological age or training age a better predictor of performance in collegiate golf?” (Faculty Supervisor)
11. Lovins, Katilin, Caudlwell, Emily (2016/2017) – “Change in center of pressure position at takeoff and landing as a measure of jump control in athlete monitoring.” (Faculty Supervisor)
12. Lewis, Kelsey, Norman, Timothy (2016/2017) – “The influence of weightlifting shoes on center of pressure change during the snatch and clean in novice weightlifters.” (Faculty Supervisor)

13. Cauldwell, Emily, Lovins, Kaitlin (2016/2017) – “Does the type of scaling influence the relationship between strength and jumping performance?” (Faculty Supervisor)
14. Batcher, Justin, Nilson, Kenneth, North, Trey, Brown, Dale, and Raszeja, Nicholas (2016/2017) (graduate) – “Validation of jump performance measures assessed with various instruments and implications for athlete monitoring.” (Faculty Supervisor)
15. Norman, Luke, Holmes, Jamarkis, Goodin, Pat, Morgan, Corey, and Lampkin, Blair (2016/2017) (Undergraduate) – “Changes in coefficient of static and dynamic friction in wide receiver’s gloves.” LaGrange College (Faculty Supervisor)
  - a. John R. Hines, Jr. Undergraduate Research Award winner for Applied Science
16. Edwards, Ty, Theam, Osborn, King, Toby, and Swift, Blane (2016/2017) (undergraduate) – “The influence of reaction time on sprinting performance.” LaGrange College (Faculty Supervisor)
17. Coggins, Aspen and Young, Chelsea (2016/2017) (Undergraduate) – “Similarities in jumping and weightlifting performance.” LaGrange College (Faculty Supervisor)
18. Smyth, Paige, Meigs, Denney, and Osborne, Michaela (2016/2017) (Undergraduate) – “The effects of water vs Gatorade on sprinting performance.” LaGrange College (Faculty Supervisor)
19. Hernandez, Celestino, Marcelin, Mikee, and Maxwell, James (2016/2017) (Undergraduate) – “The effects of sleep and stress on general fitness.” LaGrange College (Faculty Supervisor)
20. Stephens, Kathryn (2016/2017) (Undergraduate) – “Attitudes about performance nutrition amongst college students.” LaGrange College (Faculty Supervisor)
21. Nicholas Raszeja (2015/2016) (Undergraduate) – “Vertical ground reaction force analysis of football blocking.” LaGrange College (Faculty Supervisor)
22. Jennifer Kreulen (2015/2016) (Undergraduate) – “Trends and associations between students’ academic and athletic workloads, outside stressors, sleep quality, time management and participation in exercise.” LaGrange College (Faculty Supervisor)
23. Mary Kate Nix (2015/2016) (Undergraduate) – “Associations between psychological mood states and sleep quality in NCAA Division III softball players.” LaGrange College (Faculty Supervisor)
24. Will Scruggs and Samantha Murrah (2015/2016) (Undergraduate) – “Alterations in body mass and vertical jump height throughout a collegiate baseball season.” LaGrange College (Faculty Supervisor)
25. Nikeja Calhoun (2015/2016) (Undergraduate) – “The prevalence of overuse injuries in multiple NCAA Division III sports.” LaGrange College (Faculty Supervisor)
26. Anthony Jenkins (2015/2016) (Undergraduate) – “Overuse injuries in Major League Baseball: the role of pitching anthropometrics and biomechanics in predicting injury.” LaGrange College (Faculty Supervisor)



27. Justin Batcher, Thomas Embry and Nicholas Raszeja (2015/2016) (Undergraduate) – “Associations between bat swing and jumping kinetic and kinematic variables.” LaGrange College (Faculty Supervisor)
28. Danielle Gravett, Kalin Ogelsby, and Samantha Murrah (2015/2016) (Undergraduate) – “A performance comparison of two softball throwing styles.” LaGrange College (Faculty Supervisor)
29. Joshua Bricker (2014/2015) (Undergraduate) – “Reliability of a novel method for evaluating and predicting base stealing performance.” LaGrange College (Faculty Supervisor)
  - a. John R. Hines, Jr. Undergraduate Research Award winner for Applied Science

## **SUPERVISED INTERNSHIPS**

1. Nicholas Raszeja (Spring 2016) – Sport Performance Enhancement Education and Development (SPEED) Center intern. Internship focus: athlete monitoring, strength and conditioning and sport performance assessment and enhancement.
2. Jordan Conner (Spring 2015) – Sport Performance Enhancement Education and Development (SPEED) Center intern. Internship focus: athlete monitoring, strength and conditioning and sport performance assessment and enhancement.
3. Justin Batcher (JanTerm 2015) – Sport Performance Enhancement Education and Development (SPEED) Center intern. Internship focus: athlete monitoring, strength and conditioning and sport performance assessment and enhancement.
4. James Reed (JanTerm 2015) – Sport Performance Enhancement Education and Development (SPEED) Center intern. Internship focus: athlete monitoring, strength and conditioning and sport performance assessment and enhancement.
5. Tyler Brooks (Fall 2014) – Sport Performance Enhancement Education and Development (SPEED) Center intern. Internship focus: strength and conditioning and sport performance assessment and enhancement.

## **RESEARCH ASSISTANT**

- Acute responses of implementing pulsatile compression recovery sessions on weightlifting performance.
- Reactive strength index characteristics of NCAA Division I athletes.
- Kinematic analysis of acceleration phase in NCAA Division I sprinters and relationships with maximal strength characteristics.
- Physical performance characteristics of Army ROTC Cadets and relationships with APFT performance
- Post activation potentiation and electromyography associated with eccentric accentuated loading during barbell back squats.
- Volume load and training intensity with and without exercise displacement.
- Change of direction performance associated with various periodized training plans in male and female soccer athletes.

- The effects of vertically oriented resistance training on golf swing performance variables.
- The role of post-activation potentiation on countermovement jump performance following a supramaximal back squat.
- Movement screening normative ranges for various NCAA Division II sports.

## **EQUIPMENT, TECHNOLOGY, AND LABORATORY SKILLS**

### *Equipment*

- Accelerometry assessment (Myotest and PASCO)
- Biopac MP36 surface electromyography
- Brower Timing Systems
- Cardiac Science Quinton treadmill and EKG
- COSMED BODPOD air displacement plethysmography
- digital cameras
- force plate measurement (uni- and multi-planar, AMTI, Bertec, Fitness Technology, PASCO, Rice Lake)
- hydration testing (refractometry)
- lactate assessment
- Noraxon TELEMIO 2400R G2 (wireless surface electromyography)
- Parvomedics Trueone 2400 Metabolic Measurement System
- Polar heart rate monitoring
- Potentiometers
- Probotics just jump system
- Skinfold calipers/assessment
- Sony Smart Sensor (IMU)
- Vertec vertical jump assessment
- Vicon Nexus 3D motion capture
- ZEPP swing analysis sensor (IMU)

### *Software & Programming Languages*

- AMTI - Accupower software
- Bertec Data Acquisition
- Fitness Technology Ballistic Measurement System (BMS)
- Kinovea motion analysis software
- Graphic/design software (Adobe Photoshop, Gimp 2.8.14)
- Labview
- Microsoft Excel, PowerPoint, Word
- MyoResearch (Noraxon EMG analysis software)
- PASCO Scientific DataStudio and Capstone (kinetic and kinematic data analysis software)
- R (Statistical Computing Software), RStudio, Shiny
- SPSS (statistical package)
- SQL
- Vicon Nexus (ver. 1.85) (3D motion analysis)

### *Teaching Software*

- Canvas (LMS)
- Connect (LMS)

- Desire 2 Learn (LMS)
- educannon (Web 2.0 online learning interactive video lessons)
- iClicker classroom polling
- Microsoft Excel, PowerPoint, Word
- Moodle (Learning House)(LMS)
- Turnitin (plagiarism detection software)

## **ACADEMIC APPOINTMENTS AND COMMITTEES**

- UNT KHPR Graduate Curriculum Committee (2019 - )
- UNT KHPR Activity Program Committee (2018 – )
- LaGrange College Exercise Science Interim Department Chair (2017 - 2018)
- LaGrange College Academic Council (2017-2018)
- LaGrange College Graduate Council (2016 - 2018)
- LaGrange College Development and Evaluation Committee (2016 - 2018)
- Servant Scholars Task Force (2015/2016)
- Student Engagement Committee (2015/2016)
- Servant Scholars Committee (2014/15)
- Presidential Scholars Interviewer and Essay Reviewer (2015, 2016)

## **PROFESSIONAL SERVICE, MEMBERSHIPS, AND CERTIFICATIONS**

- Dataquest Data Analyst in R (2019)
- ISBS 2018 Scientific Committee (Reviewer)
- NSCA 2017 National Conference Poster Award Judge
- NSCA 2016, 2017, 2018, 2019 National Conference Abstract Reviewer
- ISBS 2017 Scientific Committee (Reviewer)
- Georgia State Director for National Strength & Conditioning Association (NSCA) (2015-2018)
- NSCA Baseball Special Interest Group Chair (2017-2018)
- NSCA Registered Strength and Conditioning Coach (RSCC) (2015 - present)
- Tennessee State Director for National Strength & Conditioning Association (NSCA) (2013-14)
- Southeast Regional NSCA Advisory Board Member (2013-14, 2015-2018)
- Georgia State NSCA Advisory Board Member (2014 – 2015)
- NSCA-GA Education Recognition Program (ERP) Liaison (2014 – 2015)
- NSCA member (2004 – present)
- American College of Sports Medicine (ACSM), (2009 – present)
- International Society of Biomechanics in Sport (ISBS) (2012 – 2016)
- ISBS 2014 Scientific Committee (Reviewer)
- ISBS 2014 Session Moderator (Landing Biomechanics)
- International Journal of Sports Medicine (IJS) reviewer
- ACSM Certified Personal Trainer (CPT), (2005 – 2018)
- NSCA Certified Strength and Conditioning Specialist (CSCS) (2009 – present)
- American Red Cross CPR and AED certification (current)
- National Pitching Association member (2014 - 2015)
- Association of Professional Ball Players of America (APBPA) member (2010 – present)

- Professional Baseball Strength and Conditioning Coaches Society (PBSCCS) (2010 – 2011)
- Society for American Baseball Research (SABR) member (2012 – 2015)
- SABR Research Committees: Collegiate Baseball, Minor Leagues, Science and Baseball, and Statistical Analysis

## **PROFESSIONAL DEVELOPMENT AND CONFERENCE ATTENDANCES**

- NSCA National Conference, Washington DC, 2019
- NSCA Texas State Clinic, College Station, TX, 2019
- Dataquest.io (Data Analyst in R path) – 2019
- NSCA Nebraska State Clinic, Omaha, NE 2019
- NSCA Coaches Conference, Indianapolis, IN 2019
- NSCA National Conference, Indianapolis, IN 2018
- Dataquest.io (Data Scientist in Python path) 2018-ongoing
- Southeast ACSM Annual Meeting, Chattanooga, TN 2018
- NSCA Coaches Conference, Charlotte, NC 2018
- Shoulder Assessment, Corrective Exercise & Programming (Cressey Performance), Woodstock, GA 2017
- NSCA Georgia State Clinic, Kennesaw, GA 2017 (Conference Organizer)
- NSCA National Conference, Las Vegas, NV 2017
- National Coaching Conference, USCCE, Atlanta, GA 2017
- SEACSM Annual Meeting, Greenville, SC 2017
- NSCA Coaches Conference, Nashville, TN 2017
- Baseball and Sports Performance Conference, Marietta, GA 2016
- NSCA Georgia State Clinic, Savannah, GA 2016 (Conference Organizer)
- NSCA National Conference, New Orleans, LA 2016
- udemy course: Building Interactive Graphs with GGplot2 and Shiny – 2016
- udemy course: SQL Masterclass – 2016
- udemy course: Introduction to Data Visualization in R Using GGplot – 2016
- udemy course: SQL for Newbs: Beginner Data Analysis – 2016
- SEACSM Annual Meeting, Greenville, SC 2016
- NSCA Coaches Conference, San Antonio, TX 2016
- Tenth Annual Coaches and Sport Science College, Johnson City, TN 2015
- udemy course: Advanced Statistics and Data Science in R –2015
- edX course from HarvardX University: “CS50x3 Introduction to Computer Science,” October – December 2015.
- edX course from Boston University: “Force and Motion: Pedagogical Content Knowledge for Teaching Physics,” October – December 2015.
- Delsys Webinar: Analysis of Motor Unit Behavior during Muscle Fatigue 2015
- 33<sup>rd</sup> International Society of Biomechanics in Sports annual conference, Poitiers, France 2015
- Swiss Strength Training Symposium, Swiss Federal Institute of Technology in Zurich (ETH Zurich), Zurich, Switzerland 2015
- Southeast NSCA Regional meeting, Duluth, GA 2015
- Ninth Annual Coaches and Sport Science College, Johnson City, TN 2014
- 32<sup>nd</sup> International Society of Biomechanics in Sports annual conference, Johnson City, TN 2014

- Southeast NSCA Regional meeting, Duluth, GA 2014
- Teaching for Higher Learning, ETSU (Spring 2014) (3hr course)
- Eighth Annual Coaches and Sport Science College, Johnson City, TN 2013
- 31<sup>st</sup> International Society of Biomechanics in Sports annual conference, Taipei, Taiwan 2013
- Sport and Coaching Science Conference. Taipei, Taiwan 2013
- ACSM Medicine Annual Meeting, Indianapolis, IN 2013
- SEACSM Annual Meeting, Greenville, SC 2013
- Seventh Annual Coaches and Sport Science College, Johnson City, TN 2012
- Sixth Annual Coaches and Sport Science College, Johnson City, TN 2011
- Annual Professional Baseball Strength and Conditioning Coaches Society (PBSCCS) Preconference at the Major League Baseball Winter Meetings, Orlando, FL 2010
- SEACSM Annual Meeting, Greenville, SC 2010
- Southeast NSCA Regional meeting, Boone, NC 2008
- NSCA National Conference, Atlanta, GA 2007
- NSCA Georgia State Clinic, Norcross, GA 2007
- Functional Movement Screening Clinic, Atlanta, GA 2007
- NSCA Georgia State Clinic, Suwanee, GA 2006
- NSCA Georgia State Clinic, Suwanee, GA 2005
- NSCA Georgia State Clinic, Kennesaw, GA 2004
- NSCA Georgia State Clinic, Athens, GA 2003

## **CAMPS**

- Olympic Day, Memorial Park, Johnson City, TN, June 2014
- Blackhawk Strength, Speed, & Agility, North Buncombe High School, Weaverville, NC June 2014
- Olympic Day, Memorial Park, Johnson City, TN, June 2013
- Olympic Day, Mountain States Health Alliance Athletic Center, Johnson City, TN, June 2012
- San Diego Padres Prospect Minicamp, Peoria, AZ, February 24<sup>th</sup> – March 3<sup>rd</sup> 2011
- San Diego Padres Major League Camp, Peoria, AZ, February 14<sup>th</sup> – 24<sup>th</sup> 2011
- San Diego Padres New Draft/Signee Minicamp, Eugene, OR, June 14<sup>th</sup> – 18<sup>th</sup> 2010

## **COACHING CHAMPIONSHIPS AND AWARDS**

- Baseball – 2018 USA South Conference Champions, NCAA Div. III, LaGrange College Panthers (strength coach and sport scientist)
- Baseball – 2017 USA South Conference Champions, NCAA Div. III, LaGrange College Panthers (strength coach and sport scientist)
- Softball – 2015 USA South Conference Champions, NCAA Div. III, LaGrange College Panthers (strength coach and sport scientist)
- Baseball – 2013 Atlantic Sun Conference Champions, NCAA Div. I, East Tennessee State University Buccaneers (strength coach and sport scientist)
- Baseball – 2011 Texas League Champions, San Antonio Missions, AA Affiliate of the San Diego Padres (strength and conditioning coach) (2011 Minor League Team of the Year)

## LIST OF REFERENCES

**Kimitake Sato, PhD, CSCS, USAW, PES**

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