

E. Meade Spratley, Ph.D.

Curriculum Vitae

Center for Applied Biomechanics

University of Virginia

4040 Lewis and Clark Drive

Charlottesville, Virginia 22911

(434) 296-7288 ext. 146

(434) 296-3453 (fax)

MeadeSpratley@virginia.edu

www.uva-cab.org

Education

Doctor of Philosophy, Department of Biomedical Engineering

Virginia Commonwealth University, December 2013

Dissertation – *Patient-Specific Modeling of an Adult Acquired Flatfoot Deformity Cohort Before & After Surgery*

Master of Science, Department of Biomedical Engineering

Virginia Commonwealth University, December 2009

Thesis – *The Design and Validation of a Computational Rigid Body Model of the Elbow*

Bachelor of Science, Department of Chemistry

University of Virginia – May 2004

Work Experience

University of Virginia, Center for Applied Biomechanics Research Associate	2014-Present
Virginia Commonwealth University, Orthopaedic Research Laboratory Research Associate	2013-2014
Virginia Commonwealth University, Orthopaedic Research Laboratory Graduate Research Assistant	2008-2013

Research Interests and Projects

- Blast Biomechanics
- Warfighter Vehicle Occupant Safety, WIAMan
- Pelvis injury classification and prediction
- Foot & Ankle injury classification and prediction
- Soft-tissue material characterization for high-rate loading regimes

Honors

- PhD Podium Finalist, ASME Summer Bioengineering Conference 2013
- Special Recognition for Teaching Excellence, VCU School of Engineering 2012-2013
- Commonwealth Award for Engineering 2010
- Phi Kappa Phi National Fellowship Award 2009

Teaching

- PHIS 310 Human Musculoskeletal Anatomy (Quantitative Physiology)
- EGRB 310 Biomechanics, Graduate Teaching Assistant
- PHIS 310 Quantitative Physiology, Graduate Teaching Assistant
- M1-ANAT Gross Anatomy, Graduate Dissection Assistant
- EGRB 210 Introduction to Biomechanics, Graduate Teaching Assistant

Associations

- Orthopaedic Research Society, Member 2012-
- American Society of Mechanical Engineers 2010-
- Alpha Eta Mu Beta Member, Biomedical Engineering Honor Society 2009-
- Virginia Academy of Science 2009-

Leadership Positions

- ASME, Bioengineering Division, Student Leadership Council 2013
- VAS, Biomedical & General Engineering Section Secretary 2011,2012

Special Skills

- SOFTWARE:
 - SolidWorks (CSWP® Certified)
 - COSMOS Analytical Suite
 - MIMICS & 3-Matic
 - Matlab
 - SAS
- TISSUES TESTING:
 - MTS Intron w/ TestWorks®
 - Tekscan HRMat® plantar force system

Publications

A. Refereed Journal Publications

- **Spratley EM**, Matheis EA, Hayes CW, Adelaar RS, Wayne JS. Effects Of Degree Of Surgical Correction For Flatfoot Deformity In Patient-Specific Computational Models. *Annals of Biomedical Engineering*. 2014. –ePub. Ahead of Print- [[doi: 10.1007/s10439-014-1195-1](https://doi.org/10.1007/s10439-014-1195-1)]
- Higgins SW, **Spratley EM**, Boe RA, Hayes CW, Jiranek WA, Wayne JS. A Novel Approach for Determining 3-D Acetabular Orientation: Results From 200 Normal Patients. *Journal of Bone & Joint Surgery*, 2014. 96(21) p.1776-1784 [[doi: 10.2106/JBJS.L.01141](https://doi.org/10.2106/JBJS.L.01141)]

- Matheis EA, **Spratley EM**, Hayes CW, Adelaar RS, Wayne JS. Plantar Measurements to Determine Success of Surgical Correction of Stage IIb Adult Acquired Flatfoot Deformity. *Journal of Foot & Ankle Surgery*. 2014. 53(5) p.562-566 [doi: 10.1053/j.jfas.2014.03.020]
- **Spratley EM**, Matheis EA, Hayes CW, Adelaar RS, Wayne JS. A Population of Patient-Specific Adult Acquired Flatfoot Deformity Models Before and After Surgery. *Annals of Biomedical Engineering*. 2014. 42(9) p1913-1922 [doi: 10.1007/s10439-014-1048-y]
- **Spratley EM**, Matheis EA, Hayes CW, Adelaar RS, Wayne JS. Validation of A Population Of Patient-Specific Adult Acquired Flatfoot Deformity Models. *Journal of Orthopaedic Research*. 2013. 31(12) p.1861 [doi:10.1002/jor.22471]
- **Spratley EM**, Arnold JM, Owen JR, Glezos CD, Adelaar RS, Wayne JS. Plantar Forces in Flexor Hallucis Longus vs. Flexor Digitorum Longus Transfer in Adult Acquired Flatfoot Deformity. *Foot and Ankle International*. 2013. 34(9) p.1286 [doi: 10.1177/1071100713487724]
- **Spratley EM**, Wayne JS. Computational Model of the Human Elbow and Forearm: Application to Complex Varus Instability. *Annals of Biomedical Engineering*. 2011. 39(3) p.1084 [doi: 10.1007/s10439-010-0224-y]
 - Chosen for Issue Cover

B. Refereed Conference Publications

- **Spratley EM**, Matheis EA, Adelaar RS, Hayes CW, Wayne JS. Parametric Modeling of Hypothetical Surgical Correction in a Cohort of Patient-Specific Flatfoot Models. 7th World Congress of Biomechanics (2014). 14-IS-4912-WCB (Podium Presentation)
- **Spratley EM**, Matheis EA, Adelaar RS, Hayes CW, Wayne JS. Post-Operative Changes to a Cohort of Patient-Matched Models of Adult Acquired Flatfoot Deformity. Orthopaedic Research Society; ORS2014-0141. (Podium presentation)
- **Spratley EM**, Matheis EA, Adelaar RS, Hayes CW, Wayne JS. Patient Specific Modeling Of A Stage II Flatfoot Population. ASME Summer Bioengineering Conference; SBC2013-14165. (Podium presentation)
- Higgins SW, **Spratley EM**, Jiranek WA, Wayne JS. Automated Computational Acquisition Of 3-D Patient-Specific Acetabular Orientation. ASME / FDA Frontiers in Medical Devices; FMD2013-16110. (Podium presentation)
- **Spratley EM**, Matheis EA, Adelaar RS, Hayes CW, Wayne JS. Plantar Loading in a Patient-Matched Computational Model of Adult Flatfoot before and after Surgery. Orthopaedic Research Society; ORS2013-0358. (Podium presentation)
- Matheis EA, **Spratley EM**, Adelaar RS, Wayne JS. Pre-Operative & Post-Operative Plantar Pressures in Stage IIb Posterior Tibial Tendon Insufficiency. Orthopaedic Research Society; ORS2013-1929
- **Spratley EM**, Matheis EA, Hayes CW, Adelaar RS, Wayne JS. Patient Specific Modeling of Stage II Flatfoot Deformity Before & After Surgery; American Orthopaedic Foot & Ankle Society; AOFAS2012-501.

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- Arnold JM, **Spratley EM**, Owen JR, Glezos CD, Adelaar RS, Wayne JS. Plantar Forces in FHL vs. FDL Transfer in Adult Acquired Flatfoot Deformity; American Orthopaedic Foot & Ankle Society; [AOFAS2012-536](#). (Podium presentation)
 - **Spratley EM**, Matheis EA, Hayes CW, Adelaar RS, Wayne JS. Patient Specific Modeling of Stage II Flatfoot Deformity Before and After Surgical Correction; ASME Summer Bioengineering Conference; [SBC2012-80366](#).
 - **Spratley EM**, Matheis EA, Adelaar RS, Hayes CW, Wayne JS Patient Specific Computational Modeling of Adult Acquired Flatfoot Deformity; Orthopaedic Research Society; [ORS2012-1898](#).
 - Arnold JM, **Spratley EM**, Owen JR, Glezos CD, Adelaar RS, Wayne JS. Plantar Forces in Flexor Hallucis Longus vs. Flexor Digitorum Longus Transfer in Adult Acquired Flatfoot Deformity; Orthopaedic Research Society; [ORS2012-1897](#).
 - **Spratley EM**, Wayne JS, A Computational Study of Complex Varus Instability of the Human Elbow Joint; ASME Summer Bioengineering Conference; [SBC2010-19599](#). (Podium presentation)