



2026 Midwest

American Society of Biomechanics

Regional Meeting



Cleveland State University

September 23 – 25, Cleveland, Ohio

<https://engineering.csuohio.edu/midwestasb>



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Welcome

Welcome to the 2026 Midwest American Society of Biomechanics (ASB) Regional Meeting in Cleveland, Ohio. We are delighted to bring together students, faculty, researchers, clinicians, and professionals from across the region for two days of scientific exchange, professional development, networking, and community building.

The mission of ASB is centered on advancing the field of biomechanics through the exchange of knowledge and ideas, and this year's program reflects the breadth and innovation of our community. Throughout the meeting, attendees will have the opportunity to engage with keynote speakers, podium and poster presentations spanning a wide range of biomechanics disciplines, career and professional development discussions, and networking opportunities. We are especially grateful to our speakers, presenters, session moderators, volunteers, sponsors, and planning committee members whose time and efforts have made this meeting possible.

Thank you for joining us at Cleveland State University, and we hope the 2026 Midwest ASB Regional Meeting provides opportunities to share your work, make new connections, and strengthen the biomechanics community throughout the Midwest.

2026 Midwest ASB Cleveland State University Planning Committee



Dr. Brian Davis
Associate Dean of
Washkewicz College of
Engineering



Luci Duncan-Burrington
ASB CSU Student
Chapter President



Ghazal Mashhadiagha
ASB CSU Student
Chapter Treasurer



Breanne Welsh
Conference Planning Lead



Erin Clark
ASB CSU Student
Chapter Secretary

Special thank you to our sponsors!



Society Information

The American Society of Biomechanics

The American Society of Biomechanics (ASB) was founded in 1977 to encourage and foster the exchange of information and ideas among biomechanists working in different disciplines and to facilitate the development of biomechanics as a basic and applied science. ASB has a membership of more than 1,000 academic researchers, clinicians, scientists, students, and industry members working to solve basic and applied problems in the realm of biomechanics and to improve understanding of the workings of biological systems. ASB members are organized into five primary discipline categories: biological sciences, exercise and sports science, health sciences, ergonomics and human factors, and engineering and applied science.

What does the ASB offer to Students?

In addition to having an elected Executive Board position for a student representative, ASB provides several venues for student engagement in Society initiatives and student participation at the Annual Meeting.

Engagement in Society Initiatives

Over the last few years, the Student Committee has initiated and organized initiatives dedicated to students and early career researchers.

1. **Cross Lab Motion Meetings:** A rotating series of lab-hosted meetings designed to foster peer feedback, spark collaboration,

and share biomechanics curiosity across laboratories at different universities.

Laboratory groups can join the rotation by filling out the Sign-Up Form on the website or emailing the ASB Student Rep (asbstudentrep@asbweb.org).

2. **Ask-Me-Anything (AMA) Series:** A series of online events by and for students. The AMA series features students that have recently published a paper talking to other students about their research and sharing their experience with the publishing process. Participation is free. Recordings of past events are available on the website (<https://asbweb.org/student-author-ama-series/>).
3. **Professional Development Series:** Started in the Fall of 2022, the novel Professional Development online events are geared toward students' professional development. This series of workshops features students, post-docs, faculty, and industry partners who will discuss topics chosen by the ASB Student Committee. Topics will include navigating career choices post-graduation, managing work/life balance, and finding/applying for funding opportunities. Participation is free. Recording of past events are available on the website (<https://asbweb.org/professional-development-series/>).
4. **Student Chapters:** The ASB Student Body provides comprehensive intellectual and professional development among students. Networking, collaboration, and discourse throughout the ASB Student Body is essential to the long-term growth of the society as a whole, as future industry and academic leaders will arise from today's students. There are 14 active Student

Chapters at universities around the country, and the Student Committee provides excellent support for students who wish to form their own Student Chapter.

5. **Biomechanics Summer Undergraduate Research Experience (B-SURE):** This program offers scholarship support to students from disadvantaged backgrounds to pursue research mentored by an ASB member. It is intended to remove the barriers associated with financial need and a lack of a professional network.
6. **Black Biomechanists Association:** BBA offers community outreach, professional programming, supportive mentoring, and other programming to support Black Biomechanists and Allies throughout the year.
7. **International Women in Biomechanics:** IWB hosts monthly teleconference meetings and workshops aimed to provide resources and professional training to the IWB community.
8. **Latinx in Biomechanix:** LiB provides networking opportunities and uplifts its members' accomplishments to support Latinx Biomechanists and Allies.
9. **The Biomechanics Initiative:** TBI leads National Biomechanics Day events worldwide, focusing and leveraging our outreach efforts to grow Biomechanics, especially in under-served communities.

Participation in the Annual Meeting

While the specific student activities may vary from year to year, here are some typical student-focused activities that the ASB offers:

1. **Student Travel Awards:** The ASB offers complimentary registration to help students cover the costs associated with attending the Annual Meeting. These awards are typically competitive. Since 2023, the application has been simplified by integrating the application with the abstract submission process. ASB supports 20 – 25 students.
2. **NextGen Biomechanics Travel Awards:** The ASB offers complimentary registration (value \$300) to help individuals from historically excluded and marginalized groups to attend the Annual Meeting. These awards are also competitive. ASB support 10 – 20 individuals.
3. **Student Volunteer Opportunities:** The ASB often seeks student volunteers to assist with various tasks during the Annual Meeting. In exchange for their time and effort, volunteers receive a complimentary registration.
4. **Student-Specific Sessions:** The ASB organizes sessions and workshops specifically tailored to students' needs and interests. These sessions can provide valuable networking opportunities, career guidance, and educational content designed to support student development in the field of biomechanics.
5. **Mentoring Program:** The ASB Student Committee organizes the one-on-one

mentoring program that matches students with faculty for mentoring at the meeting and afterwards. This program includes a dedicated lunch for program participants to meet.

6. **Diversity Event & Women in Science**

Event: The ASB Community Committee organizes a lunch meeting every year focused on equity & inclusion for people from marginalized groups, and an evening event focused on equity & inclusion for female & non-binary individuals and their allies. These events provide networking and capacity building opportunities for all attendees. In 2023 the topic of discussion at the Diversity Lunch is citation bias, and the topic of discussion at the Women in Science Event is the Likeability Trap.

7. **Workshops:** The ASB offers many workshops at the Annual Meeting every year, and several are focused on issues disproportionately affecting members from marginalized groups, teaching-intensive institutions and others who don't have the resources, network, and institutional knowledge that the largest research-intensive institutions have.

8. **Affinity Group Meetings:** The ASB welcomes affinity groups to the Annual

Meeting as a venue to cultivate cohort and community building.

9. **Networking Opportunities:** The ASB organizes several social events designed to facilitate networking among students as well as with professionals. – Student Social / Night Out: A casual, fun event designed for students to network with Student Committee members, Student Chapter representatives and fellow students.

10. **Student Room Sharing:** The ASB facilitates a process by which delegates can share hotel rooms and accommodation costs.

11. **Student Presentation Award:** The ASB recognizes outstanding student poster presentations at the Annual Meeting with the President's Poster Award.

General Conference Information

Code of Conduct

Membership in professional societies, including the American Society of Biomechanics, has implied expectations for ethical behavior in research, teaching, and service to all segments of society. Student members are expected to follow the same Code of Conduct as all professional members of ASB.

As a member of the American Society of Biomechanics, I shall:

- honor and respect the field of biomechanics by conducting myself responsibly, ethically, and lawfully.
- hold paramount the safety, health, and welfare of the public.
- provide truthful, accurate, relevant and evidence-based information based upon my competence in the subject matter and knowledge of the facts and will disseminate without deception.
- abide by the basic principles of respect of persons, beneficence and justice and comply with regulations in accordance with my institutional review board.
- endeavor to increase the knowledge in my discipline and within reasonable limits of time and finance, shall make available that knowledge, skill and training to the public for the benefit of all.
- disclose any conflicts of interest and will review the professional work of others fairly and in confidence.
- recognize the contributions of others and will not associate or allow the use of their name on enterprise known to be illegal, fraudulent or of questionable character.

- participate in activities contributing to the improvement of the biomechanics community

Name Badges

Your name badge is your admission ticket to preconference events, workshops, conference sessions, coffee breaks, lunches, and receptions. Please always wear it. At the end of the conference, we ask that you recycle your name badge in one of the name badge recycling stations that will be set out or leave it at the registration desk.

Registration

The ASB Registration and information desk will be open during the following dates and times:

Wednesday, Sept. 23 – 6:00 PM to 8:00 PM

Thursday, Sept. 24 – 7:45 AM to 9:15 AM

Friday, Sept. 25 – 7:45 AM to 9:15 AM

The registration desk will be on the 5th floor of the Wolstein Center on Wednesday, September 23. On Thursday and Friday, the registration desk will be on the 4th floor.

If you need assistance during the conference, please visit the registration desk or find Dr. Brian Davis, Luci Burrington, Ghazal Mashhadiagha, Breanne Welsh, or Erin Clark, conference chairs.

Poster Information

Poster Session A – Thursday, September 24

Poster Session B – Friday, September 25

Please set up and tear down during the designated times for your assigned poster session day.

Set Up: Between 8:00-10:00 AM

Session Time: 10:30-11:30 AM

Tear Down: Please tear down by 12:00 PM.

Meals

Breakfast, lunch, and coffee breaks will be provided on Thursday, September 24 and Friday, September 25. All other meals are on your own. Please view the full program for times.

Dietary Requirements

If you noted a dietary requirement when registering, it will be noted on the back of your name badge. All lunches are grab-and-go lunch boxes. Dietary needs will be noted on the boxed lunch.

Yoga Session

Thursday, September 24th at 7:00 AM
CSU Rec Center, Studio 227
2420 Chester Ave, Cleveland, OH 44115

Join us for an easy yoga flow designed to help you move with intention and understand how your body works. This class blends gentle postures with simple biomechanical principles, highlighting how joint alignment, muscle activation, and breath coordination support efficient movement. This flow is accessible to all levels and offers a mindful way to connect movement with the science of how your body moves.

Yoga mats will be provided.

Free Time: Places of Interest

A number of activities and places of interest have been listed below for the free evenings on Thursday and Friday.

Cleveland Museum of Natural History

At the Cleveland Museum of Natural History, explore exhibits, encounter wildlife, and discover the natural world. Open Thursday, September 24 and Friday, September 25 from 10:00 AM–5:00 PM. General admission purchased in advance is \$25 for adults and \$18 for undergraduate students (\$28 and \$21,

respectively, at the door). Planetarium shows and 3D movies can be added for \$7 each.

Cleveland Museum of Art

The Cleveland Museum of Art offers dynamic experiences that illuminate the power and enduring relevance of art in today's global society. Visiting the museum's collection is FREE to the public. Open Thursday, September 24 from 10:00 AM to 5:00 PM, and Friday, September 25 from 10:00 AM to 9:00 PM.

Great Lakes Science Center

Great Lakes Science Center's mission is to make science, technology, engineering, and math come alive. Open Thursday, September 24 from 10:00 AM to 8:00 PM, and Friday, September 25 from 10:00 AM to 5:00 PM. General admission tickets are \$19.95 each.

Rock & Roll Hall of Fame

Born from the collision of rhythm & blues, country, and gospel, rock & roll is a spirit that is inclusive and ever-changing. Open Thursday, September 24 from 10:00 AM to 9:00 PM, and Friday, September 25 from 10:00 AM to 5:00 PM. Tickets are \$40 for locals, students, military, and first responders with valid ID, and \$45 for adults.

Playhouse Square District

Head over to Playhouse Square: KeyBank State Theatre to see Tony Award-Winning “Perfect Musical Comedy” – *Death Becomes Her*. Limited tickets are available for purchase online for Thursday, September 24 and Friday, September 25 at 7:30 PM.

Experience *The Magicians Table* at Cibrèò Privato, a private event space at 1501 E. 14th Street in the Playhouse Square District, featuring an immersive night of close-up magic, live entertainment, and mind-bending illusions. Limited tickets are available for purchase online for Thursday, September 24 and Friday, September 25 at 8:00 PM.

Keynote Speakers

Presenting Thursday, September 24th, 9:30 AM – 10:30 AM

Deanna Gates, PhD

University of Michigan



Deanna Gates, Ph.D., is a Professor of Movement Science, Biomedical Engineering, and Robotics at the University of Michigan. She earned her B.S. in Mechanical Engineering from the University of Virginia (2002), M.S. in Biomedical Engineering from Boston University (2004), and Ph.D. in Biomedical Engineering at the University of Texas at Austin (2009). Dr. Gates worked in engineering consulting and in civilian and military clinical gait laboratories, before arriving at the University of Michigan in 2012. The goal of her research program is to improve function and quality of life in individuals with amputations. Her research explores the factors that relate to a person's ability to successfully use prosthetic devices, how to train individuals for optimal use, and the development of appropriate outcome measures to assess success of new technology.

Presenting Thursday, September 24th, 1:30 PM – 2:30 PM

Mariana Kersh, PhD

University of Illinois Urbana-Champaign



Dr. Mariana Kersh directs the interdisciplinary Tissue Biomechanics Laboratory with the aim of understanding the response of musculoskeletal tissues to perturbations in mechanical stimuli. Using both experimental and computational methods enabled by multi-scale imaging assays, Dr Kersh's group identifies structure-function-composition relationships in bone, ligament, and tendon with the end goal of improving the diagnosis and treatment of musculoskeletal disorders. The work of Dr. Kersh's team has received awards from both the US and Australian Orthopedic Research Societies, international biomechanics societies, and her leadership recognized by the American Institute of Medical and Biological Engineering. At The University of Illinois at Urbana-Champaign Dr Kersh is an Associate Professor of Mechanical Science and Engineering, Health Innovation Professor of the Carle Illinois College of Medicine, and co-chair of Integrative Imaging at the Beckman Institute for Advanced Science and Technology. You can learn more at <https://uitbl.mechse.illinois.edu>.

Presenting Friday, September 25th, 9:30 AM – 10:30 AM

Kath Bogie, PhD, FAIMBE

U.S. Department of Veteran Affairs



Kath M. Bogie, D.Phil, FAIMBE, FWHS is a Professor at Case Western Reserve University and Research Career Scientist at the Louis Stokes Cleveland VA Medical Center. Dr. Bogie's research focus is on evidence-based treatment and prevention of chronic non-healing wounds, including personalized biomarkers and patient-centered smart, cost-effective biotechnology. Current work includes a study to better understand patterns of associated multimorbidity and associations with accelerated aging and reduced quality of life for Veterans living with spinal cord injury and disorders (SCI/D). Dr. Bogie is an elected Fellow of the American Institute for Medical and Biological Engineering, and of the Wound Healing Society, is on the NPIAP Board of Directors, serves on the RESNA WRS Standards Committee and is Vice-Chair of the international Committee. Dr. Bogie is the Editor-in-Chief of the

Journal of Rehabilitation and Assistive Technologies Engineering (JRATE) and has received continuous funding for over 20 years, from the DoD SCI Research Program, VA Rehabilitation Service, the Craig H. Neilsen Foundation and the Paralyzed Veterans of America. She has published over 125 papers and chapters and holds twelve patents.

Presenting Friday, September 25th, 1:30 PM – 2:30 PM

Majid Rashidi, PhD

Case Western Reserve University



Majid Rashidi, Ph.D., is a Professor of Mechanical and Aerospace Engineering at Case Western Reserve University. He earned his B.S. (1981), M.S. (1983), and Ph.D. (1987) in Mechanical Engineering from Case Western Reserve University. Dr. Rashidi previously served as a Research Associate at the NASA Lewis Research Center and held faculty and leadership positions at Cleveland State University, including Professor of Mechanical Engineering and Chair of the Engineering Technology Department. Throughout his academic career, his work has focused on applying innovative engineering approaches to medical challenges, including the design and development of medical devices and testing systems for implantable prostheses. He holds 18 U.S. patents, including eight related to medical applications, with inventions spanning cardiac pacemaker

lead extraction, sleep apnea treatment, orthopedic implant testing, artificial joint evaluation, and electrophysiology catheter testing.

Workshop

Thursday, September 24th, 2:45 PM – 3:45 PM

HasMotion

Preparing Biomechanical Data for Machine Learning and AI

Presenters: Scott Selbie (CEO) and Ishi Arora (Biomechanical Engineer)

Big data in biomechanics presents researchers with exciting opportunities, including the ability to train machine learning models on rich data sets of human movement. Unfortunately motion capture data is rarely collected in a manner that is immediately ready for machine learning, requiring additional processing steps to be completed. The knowledge discovery process provides a structured framework for reliably extracting insights from big data and consists of five steps: gathering, cleaning, shaping, analyzing, and reporting. From this process, cleaning and shaping stand out as important precursors to any machine learning.

This workshop will focus on how to clean and shape data, including how these steps are intimately connected to the research question being asked. Working with a publicly available dataset, the presenters will illustrate how simple decisions at these step impact follow on analysis. A key takeaway is that these steps must be performed with a clear view of the intended analysis.



Exhibitors & Sponsors

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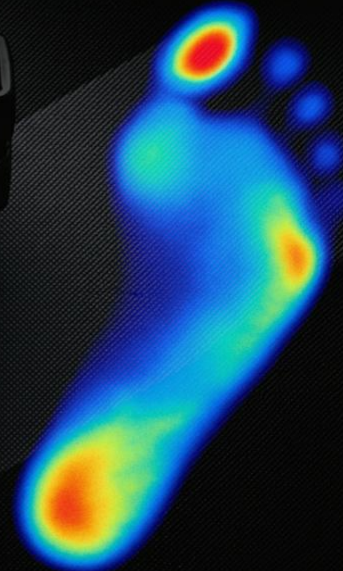
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Podium Sessions

Thursday, September 24

Trunk, Spine, & Postural/Balance Control

Chairs: Raven Foust & Chaya Konig

DEFINING THE RELATIONSHIPS BETWEEN A NOVEL MULTIDIMENSIONAL PSEUDORANDOM PERTURBATION AND A QUIET STANDING BALANCE TASK

Sophia Chirumbole

The Ohio State University, Columbus, OH, USA

VELOCITIES & SYMMETRIES: AN EXPLORATORY WALK

Xinyi 'Feliz' Ge

University of Cincinnati, Cincinnati, OH, USA

EFFECTS OF ONE-MONTH BADUANJIN EXERCISE ON TRUNK FLEXION-EXTENSION BIOMECHANICS IN INDIVIDUALS WITH CHRONIC LOW BACK PAIN

Qiang Guo

University of Kentucky, Lexington, KY, USA

CLASSIFICATION OF GAIT PERTURBATIONS USING INERTIAL MEASUREMENT UNITS AFTER SPINAL CORD INJURY

Isabella McCollum

Case Western Reserve University, Cleveland, OH, USA

Tissue & Cardiovascular Biomechanics

Chairs: Skye Carlson & Rachael Gowen

INVESTIGATING THE RELATIONSHIP BETWEEN AORTIC DISSECTION FLAP MOTION AND HEMODYNAMICS USING MRI

Hannah Cebull

Cleveland State University, Cleveland, OH, USA

PRESSURE GRADIENTS AS A MECHANICAL INDICATOR OF SHEAR: AN FEM APPROACH FOR DIABETIC FOOT ULCERATION PREVENTION

Kareemat Melaiye

Cleveland State University, Cleveland, OH, USA

MECHANOBIOLOGICAL REGULATION OF SKELETAL MUSCLE DEVELOPMENT USING FLEXIBLE 3D-PRINTED PIEZOELECTRIC PLATFORMS

Derya Ozhava

Cleveland State University, Cleveland, OH, USA

BIOMECHANICAL MODELING OF PORCINE AORTIC TISSUES

Kylie Schmitz

Cleveland State University, Cleveland, OH, USA

Neural Engineering & Neuroprosthetics

Chairs: Breanne Welsh & Madison Luthy

RECONNECTING THE HAND AND ARM TO THE BRAIN (REHAB): USING MULTI-CONTACT NERVE CUFFS FOR MOTOR AND SENSORY RESTORATION

Benjamin Alexander

Case Western Reserve University, Cleveland, OH, USA

EFFORT-BASED DECISION-MAKING IN POST-STROKE GAIT: A FEASIBILITY STUDY

Dana Lorenz

Case Western Reserve University, Cleveland, OH, USA

PUTTING THE BRAIN IN DIRECT CONTROL OF MUSCLE STIMULATORS

Ziling Luo

Case Western Reserve University, Cleveland, OH, USA

*CLOSED-LOOP FORCE-CONTROLLED
MECHANICAL STIMULATION OF
PERIPHERAL TARGETS IN A RAT MODEL TO
EVALUATE PRESSURE RESPONSE*

Jenevieve Surkin

University of Michigan, Ann Arbor, MI, USA

Sports & Comparative/Functional Movement

Chairs: Noah Gottschling & Luci Burrington

*HOME USE OF A SENSORY
NEUROPROSTHESIS REDUCES RATES OF
FALLS AND STUMBLES*

Srikanth Chavali

Case Western Reserve University, Cleveland,
OH, USA

*GROUND CONTACT PRESSURES DURING
SHUFFLING REDIRECTION IN BASKETBALL*

Neha Kulkarni

University of Pittsburgh, Pittsburgh, PA, USA

*SEGMENTAL KINEMATIC CONTRIBUTIONS
TO PEAK BARBELL VELOCITY*

Zachary Sievert

University of Cincinnati, Cincinnati, OH, USA

*DO PERTURBATIONS ALTER JUMP
LANDING STRATEGIES?*

Nicholas Tom

The Ohio State University, Columbus, OH, USA

Friday, September 25

Prosthetics, Orthotics, & Assistive Devices

Chairs: Zachary Sievert & Abdul Melaiye

*DESIGN AND ANALYSIS OF A NOVEL
PASSIVE DYNAMIC ANKLE FOOT ORTHOTIC
STRUT WITH VARIABLE STIFFNESS*

Riya Agrawal

Northwestern University, Evanston, IL, USA

*IMPLICATIONS OF SEAT PAN TILT ON THE
OBESE POPULATION*

Aaron Dawson

Michigan State University, East Lansing, MI,
USA

*A MUSCULOSKELETAL MODEL FOR
PREDICTING INTERACTIONS OF MUSCLE
STRENGTH AND PROSTHESIS DESIGN ON
TRANSTIBIAL PROSTHETIC GAIT*

Anna Pogharian

Northwestern University, Evanston, IL, USA

*DEVELOPMENT AND USE OF A PORTABLE
INSTRUMENTED WHEELCHAIR FOR
MEASURING PROPULSION TORQUE*

Somlata Dev Sharma

Michigan State University, East Lansing, MI,
USA

Knee Osteoarthritis Biomechanics

Chairs: Kylie Schmitz & Haleh Foroutan

*POSITIVE LOWER EXTREMITY WORK
DISTRIBUTION AND ITS ASSOCIATION
WITH SYMPTOMS AND FUNCTION IN
THOSE WITH KNEE OSTEOARTHRITIS*

Craig Hensley

University of Illinois Chicago, Chicago, IL,
USA

*GAIT PHENOTYPE ORGANIZATION BY FALL
HISTORY IN PEOPLE WITH KNEE
OSTEOARTHRITIS*

Joy Itodo

University of Illinois Chicago, Chicago, IL,
USA

*LINKS TO MOVEMENT VARIABILITY IN
FALLERS AND NON-FALLERS WITH KNEE
OSTEOARTHRITIS*

Ogundoyin Ogundiran

University of Illinois Chicago, Chicago, IL,
USA

*CHARACTERIZING THE RELATIONSHIP
BETWEEN TRUNK MOVEMENT, PAIN,
ENERGY, AND FATIGABILITY IN KNEE
OSTEOARTHRITIS*

Kathleen Suvada

University of Illinois Chicago, Chicago, IL,
USA

Wearable & Sensor-Based Biomechanics

Chairs: Noah Gottschling & Erin Clark

*MACHINE LEARNING-BASED DECODING
OF GAIT SPEED INTENT AFTER SPINAL
CORD INJURY FROM WEARABLE SENSORS
FOR FUTURE USER-DRIVEN
NEUROPROSTHESES*

Madelaine Blincoe

Case Western Reserve University, Cleveland,
OH, USA

*ESTIMATING TRUNK MOVEMENT AS A
MARKER OF COMPENSATION AFTER
STROKE FROM WRIST-WORN INERTIAL
SENSORS*

Nicholas Nazak

Case Western Reserve University, Cleveland,
OH, USA

*HAND POSE PREDICTION WITH
ELECTRICAL IMPEDANCE TOMOGRAPHY*

Brendan O'Rourke

Northwestern University, Evanston, IL, USA

*PREDICTING FALLS USING MACHINE
LEARNING*

Elizabeth Weyman Heller

Cleveland State University, Cleveland, OH

Materials, Manufacturing, & Fabrication

Chairs: Jack Manning & Kareemat Melaiye

*TOWARD BIOMECHANICALLY INFORMED
DESIGN OF FUNCTIONALLY GRADED NITI
STRUCTURES FABRICATED BY ADDITIVE
MANUFACTURING*

Ahu Celebi

University of Toledo, Toledo, OH, USA

*BIOMECHANICS COHORT SIZES: DOES THE
TREND FOLLOW MOORE'S LAW?*

Brian Davis

Cleveland State University, Cleveland, OH,
USA

*MARKER PLACEMENT SENSITIVITY IN THE
SHRINERS CHILDREN'S GAIT MODEL
USING INDIVIDUAL MARKER ERROR
ANALYSIS*

Grant Schwiebert

The Ohio State University, Columbus, OH, USA

*EFFECTS OF VISCOELASTIC PROSTHETIC
PYLONS AND ANKLE-FEET ON LIMB
LOADING IN UNILATERAL TRANSTIBIAL
PROSTHETIC GAIT*

Sudeesh Subramanian

Northwestern University, Evanston, IL, USA

Poster Listings

Thursday, September 24

Sports & Athletic Performance Biomechanics

P1-1 *INTRA-SESSION AND BETWEEN-SESSION RELIABILITY OF WEARABLE IMU'S TO MEASURE UPPER EXTREMITY ACCELERATION IN COLLEGIATE JAVELIN THROWERS*

Alec Gorman

John Carroll University, University Heights, OH, USA

P1-2 *WHICH SHOE COMPRESSION DESCRIPTORS CARRY INFORMATION? FROM COMPRESSION TESTING TO TIBIAL AND SACRAL SHOCK*

Taylor Mangoba

Manlius Pebble Hill School, DeWitt, NY, USA

P1-3 *DEEP LEARNING ANALYSIS OF GROUND REACTION FORCE CHANGES DURING A FATIGUING EXERCISE*

Ghazal Mashhadiagha

Cleveland State University, Cleveland, OH

P1-4 *TEMPORAL CHARACTERISTICS OF SUPPORTING FOOT HEEL CONTACT DURING BALLET FOUETTÉ TURNS*

Han Nguyen

Denison University, Granville, OH, USA

P1-6 *INDIVIDUAL OPTIMUM TAKEOFF ANGLE IN THE STANDING LONG JUMP FROM SMARTPHONE MARKERLESS MOTION CAPTURE*

Lucas Yuan

Huron High School, Huron, OH, USA

Tissue, Implant, & Biomaterial Mechanics

P1-7 *PARAMETRIC EVALUATION OF ULTRASOUND HEATING AROUND BIOMEDICAL IMPLANTS IN TISSUE-MIMICKING ENVIRONMENTS*

Luci Duncan-Burrington

Cleveland State University, Cleveland, OH

P1-8 *CHARACTERIZATION OF THE DYNAMIC MECHANICAL RESPONSE OF INJURED SPINAL CORD USING ATOMIC FORCE MICROSCOPY*

Elif Ertugral

Cleveland State University, Cleveland, OH

P1-9 *BIOMECHANICAL ANALYSIS OF COMPOSITE NITINOL-POLYCAPROLACTONE INTERBODY CAGE WITH ENDPLATE CONFORMITY: A FINITE ELEMENT ANALYSIS*

Nabeel Khatri

The University of Toledo, Toledo, OH, USA

P1-10 *DEVELOPMENT AND VALIDATION OF A MINIATURIZED MECHANICALLY ADAPTIVE MICROFLUIDIC NEURAL PROBE*

Pearl Marks

Case Western Reserve University, Cleveland, OH, USA

P1-11 *BIOPRINTED PIEZOELECTRIC CONSTRUCTS AS A POTENTIAL THERAPY FOR TREATING ARTICULAR CARTILAGE DEFECTS AND INJURIES*

Breanne Welsh

Cleveland State University, Cleveland, OH

P1-12 *OPTIMIZATION AND VALIDATION OF 3D-PLOTTED SCAFFOLDS FOR BONE TISSUE ENGINEERING*

Brendan Williamson

Miami University, Oxford, OH, USA

Biomedical Modeling & Translational Bioengineering

P1-13 *A NOVAL APPROACH TO CREATING LIFELIKE MRI PHANTOMS USING SYNTHETIC MATERIALS USING CAROTID ARTERY STENOSIS AS A BASE CASE*

Michael Ambrosia

Cleveland State University, Cleveland, OH

P1-14 *THE VAGINAL MICROBIOME AND IMMUNITY: DESIGNING AN IN VITRO ASSAY TO STUDY EFFECTS OF RESIDENT BACTERIAL PRODUCTS ON VAGINAL EPITHELIAL WOUND HEALING*

Rachael Gowen

Cleveland State University, Cleveland, OH

P1-15 *MECHANISTIC MODELING OF VENTRICULAR WALL KINEMATICS AND SIMULATED LVAD UNLOADING FOR HEART FAILURE SEVERITY ASSESSMENT*

Joshua Lining

Cleveland State University, Cleveland, OH

P1-16 *VACCINE FORMULATION ENGINEERING FOR DURABLE HUMORAL IMMUNITY IN METABOLIC DISEASES: LINKING BIOMATERIAL INPUTS TO GERMINAL CENTER PRODUCTIVITY*

Reyhaneh Tabatabaei

Cleveland State University, Cleveland, OH

Friday, September 25

Biomechanical Measurement, Wearables, & Modeling

P2-1 *COMPUTATIONAL MODELING USING PRINCIPAL COMPONENT ANALYSIS OF CARPAL KINEMATICS, STRAIN ANALYSIS, AND FINITE ELEMENT STRESS ESTIMATION OF THE WRIST*

Megha Agrawal

Brown University, Providence, RI, USA

P2-2 *FROM USER NEEDS TO IMPLEMENTATION: DEVELOPING AN ACCESSIBLE INTERFACE FOR ASSISTIVE COLLABORATIVE ROBOTS*

Louis Eliofo

Cleveland State University, Cleveland, OH, USA

P2-3 *WEARABLE SOFT COMPOSITE SENSOR FOR MONITORING ACHILLES TENDON DYNAMICS*

Owen Garrett

University of Wisconsin-Madison, Madison, WI, USA

P2-4 *AUGMENTING HAND OSTEOARTHRITIS CLASSIFICATION WITH CYCLEGAN AND EFFICIENTNETB7*

Xiaohan Jiang

Cleveland State University, Cleveland, OH, USA

P2-5 *PATELLA MARKER PLACEMENT SENSITIVITY TO SOFT TISSUE ARTIFACT IN 3D MOTION CAPTURE*

Grace Lampart

The Ohio State University, Columbus, OH, USA

P2-6 *FOOD FOR THOUGHT: FERRET (MUSTELA PUTORIUS FURO) TONGUE KINEMATICS IN RESPONSE TO FOODS OF VARYING MECHANICAL RESISTANCE*

Ryan Vaziri

The University of Akron, Akron, OH, USA

Gait, Balance, & Stability

P2-7 *SPLIT-BELT TREADMILL WALKING IN INDIVIDUALS WITH LOWER-LIMB AMPUTATION: A SCOPING REVIEW.*

Norah Alhajri

University of Michigan, Ann Arbor, MI, USA

P2-8 *LINKING LATERAL FOOT PLACEMENT AND MARGIN OF STABILITY TO GAIT CONTROL IN CHIARI MALFORMATION*

Raven Foust

Cleveland State University, Cleveland, OH

P2-9 *STUDY PROTOCOL FOR ASSESSING THE IMPACT OF COGNITIVE-SENSORIMOTOR DYSFUNCTION ON GAIT AND BALANCE IN LONG COVID*

Jack Manning

Northwestern University, Evanston, IL, USA

P2-10 *REACTIVE STABILITY FOLLOWING AN UNEXPECTED TREADMILL PERTURBATION IN INDIVIDUALS WITH TYPE I CHIARI MALFORMATION*

Benjamin McGarry

Cleveland State University, Cleveland, OH, USA

P2-11 *ASSOCIATIONS AMONG JOINT POWER GENERATION, FATIGABILITY, ENERGY RECOVERY, AND PHYSICAL ACTIVITY IN PEOPLE WITH KNEE OSTEOARTHRITIS.*

Oiza Peters

University of Illinois Chicago, Chicago, IL, USA

Neurorehabilitation & Assistive Technology

P2-12 *AN EMG-DRIVEN FUNCTIONAL NEUROMUSCULAR STIMULATION CONTROLLER FOR INDEPENDENT TRANSFERS AFTER SPINAL CORD INJURY*

Md Asif Arefeen

Case Western Reserve University, Cleveland, OH, USA

P2-13 *CO-CONTRACTION AND EXOSKELETON INFORMED MODEL PREDICTIVE CONTROL FOR A SIMULATED UPPER-LIMB SYSTEM*

Skye Carlson

Cleveland State University, Cleveland, OH

P2-14 *A WEARABLE ELECTRODE SLEEVE TO IMPROVE FUNCTIONAL ELECTRICAL STIMULATION DELIVERY FOR INDIVIDUALS WITH UPPER EXTREMITY MUSCULOSKELETAL DISORDERS AND INJURIES*

Erin Clark

Cleveland State University, Cleveland, OH

P2-15 *BIOMECHANICAL ANALYSIS OF FUNCTIONAL-ELECTRIC STIMULATION ROWING USING A POSITIONAL THRESHOLD-BASED STIMULATION DELIVERY SYSTEM*

Peter Edwards

Case Western Reserve University, Cleveland, OH, USA

P2-16 *CONTINUOUS PHASE VS TIME-BASED SYNCHRONIZATION OF FUNCTIONAL ELECTRICAL STIMULATION TO ASSIST WALKING MOBILITY AFTER STROKE*

Justin Golabek

Case Western Reserve University, Cleveland, OH, USA

P2-17 *EVALUATION OF A CUSTOMIZABLE CORSET WITH AB/ADDUCTION FOR LOWER LIMB EXOSKELETONS*

Nikhil Misra

Case Western Reserve University, Cleveland, OH, USA

P2-18 *DEVELOPMENT OF A DIRECT MYOELECTRIC CONTROL SYSTEM FOR A POWERED PROSTHETIC ANKLE*

Jacob Rollins

Case Western Reserve University, Cleveland, OH, USA

P2-19 *LOWER LIMB FUNCTIONAL ELECTRICAL STIMULATION IMPROVES STAIR STEPPING IN AN INDIVIDUAL WITH STROKE*

Gregory States

MetroHealth, Cleveland, OH, USA

Daily Program

<i>Wednesday, September 23rd – Main Events: Wolstein Center 5th Floor</i>		
Time	Event	Location
6:00 PM – 8:00 PM	Registration & Welcome Reception: Dr. Doug Wajda	Conference Pavilion

<i>Thursday, September 24th – Main Events: Wolstein Center 4th Floor</i>		
Time	Event	Location
7:00 AM – 8:00 AM	Yoga & Biomechanics (Optional)	Rec Center, Studio 227
7:45 AM – 9:15 AM	Registration & Breakfast	4 th Floor Lobby
9:15 AM – 9:30 AM	Welcome Address: Dr. Brian Davis	Room 411
9:30 AM – 10:30 AM	Keynote Address 1: Dr. Deanna Gates	Room 411
10:30 AM – 11:30 AM	Poster Session A Coffee Break	Room 410
11:30 AM – 12:30 PM	Parallel Podium Session 1: (a) Trunk, Spine, & Postural/Balance Control (b) Tissue & Cardiovascular Biomechanics	(a) Room 410 (b) Room 411
12:30 PM – 1:30 PM	Lunch Speaker – Moira Pryhoda, PhD	Room 411
1:30 PM – 2:30 PM	Keynote Address 2: Dr. Mariana Kersh	Room 411
2:30 PM – 2:45 PM	Coffee Break Networking	4 th Floor Lobby
2:45 PM – 3:45 PM	Workshop: HasMotion	Room 410
3:45 PM – 4:45 PM	Parallel Podium Session 2: (a) Neural Engineering & Neuroprosthetics (b) Sports & Comparative/Functional Movement	(a) Room 410 (b) Room 411
4:45 PM – 5:30 PM	Sponsors	4 th Floor Lobby
6:00 PM – 7:00 PM	Happy Hour / Networking Event: Beer & Biomechanics	Forest City Brewery 2135 Columbus Rd, Cleveland, OH 44114

<i>Friday, September 25th – Main Events: Wolstein Center 4th Floor</i>		
Time	Event	Location
7:45 AM – 9:15 AM	Registration & Breakfast	4 th Floor Lobby
9:15 AM – 9:30 AM	Welcome Address: CSU ASB Student Chapter President, Luci Duncan-Burrington	Room 411
9:30 AM – 10:30 AM	Keynote Address 3: Dr. Kath Bogie	Room 411
10:30 AM – 11:30 AM	Poster Session B Coffee Break	Room 410
11:30 AM – 12:30 PM	Parallel Podium Session 3: (a) Prosthetics, Orthotics, & Assistive Devices (b) Knee Osteoarthritis Biomechanics	(a) Room 410 (b) Room 411
12:30 PM – 1:30 PM	Lunch Career-Planning Panel	Room 411
1:30 PM – 2:30 PM	Keynote Address 4: Dr. Majid Rashidi	Room 411
2:30 PM – 3:30 PM	Parallel Podium Session 4: (a) Wearable & Sensor-Based Biomechanics (b) Materials, Manufacturing, & Fabrication	(a) Room 410 (b) Room 411
3:30 PM – 4:45 PM	CHMS Tour	Washkewicz College of Engineering
4:45 PM – 5:30 PM	Closing Address & Awards: CSU Conference Planning Committee	Room 411