Split into six groups, have a piece of paper and pen ready

Team DOG (woof): Front of room near door
Team CAT (meow): Front of room near windows
Team FROG (ribbit): Middle of room near windows
Team HORSE (neigh): Middle of room near windows
Team COW (moo): Back of room near door
Team DUCK (quack): Back of room near windows
JEOPARDY!
<table>
<thead>
<tr>
<th>Motion capture</th>
<th>Finite differences</th>
<th>Inverse dynamics</th>
<th>Misc</th>
<th>Gait</th>
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He was a pioneer in motion capture-based biomechanics showing that horses have a full flight phase.
Who is Muybridge?
The process used to calculate joint angles from segment positions
What is the inverse kinematics?
These angles are positive in flexion
What are joint angles?
Segment angles are calculated using this marker minus the distal marker for each segment.
What is the proximal segment marker?
Joint velocities and accelerations are calculated using this
What is numerical differentiation?
Numerical differentiation can be problematic and result in this
What is noise?
This finite difference method results in losing a datapoint at the end.
What is Euler’s method?
Finite differences are based on approximations from this
What is the Taylor Series Expansion?
The order of error when using central difference method
Delta T \,^2
DAILY DOUBLE
The matlab function calculating the numerator in Euler’s method
What is diff?
The location of the equivalent mass for a rigid body segment
What is center of mass?
This is used to calculate the mass of each segment
What is an anthropometry table?
Joint torques are based on the acceleration of a segment times this
What is the segment moment of inertia?
For frontal plane 2d motion, the rotation occurs about this anatomical axis
What is the anterior-posterior axis?
The inverse dynamics convention for positive moments is this
What is extension?
This measure can tell us how much muscle force will be needed to accelerate the body segments with a certain angular velocity.
What is joint power?
Positive power occurs when the moment and angular velocity are this
What is in the same direction/aligned?
This method is used to align biomechanics data across different subjects by minimizing the difference between curves.
What is dynamic time warping?
This method is used to compare right and left differences
What is symmetry index?
This is used to measure the similarity between two signals
What is cross correlation analysis?
This phase represents approximately 40% of the gait cycle
What is the swing phase?
The foot is on the ground during this phase of the gait cycle
What is the stance phase?
Your ability to absorb the impact of ground contact can be best assessed during this portion of stance.
What is the braking phase?
Without the determinants of gait, we have this type of walking pattern.
What is compass gait?
This determinant of gait changes the effective stiffness of the leg (and helps with shock absorption)
What is knee flexion?
FINAL JEOPARDY!
The country Dr. Kersh worked in during her PhD
What is Switzerland?
<table>
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<tr>
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