Sports Engineering

Session Chairs

Patrick Drane
Baseball Research Center – University of Massachusetts Lowell

Yasuo Nakamura
Health and Sports Science – Doshisha University
Sports Engineers are responsible for the study, analysis, design and understanding required to ensure the progress of safety and performance in sport (equipment and body motion).

The Gallup Organization (2008)

People may participate in several sports. Sports will be selected depending on season.


People usually participate in one sport.

Initially, Physical education of school curriculum
Then, Independent club(sports) activities
**Physique Difference**

**USA (Age:20-29)**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Height (ft in)</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>177.6cm</td>
<td>85.4kg</td>
</tr>
<tr>
<td>Female</td>
<td>163.2cm</td>
<td>70.7kg</td>
</tr>
</tbody>
</table>


**Japan (Age:17)**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Height (ft in)</th>
<th>Weight (lbs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>170.7cm</td>
<td>63.1kg</td>
</tr>
<tr>
<td>Female</td>
<td>158.0cm</td>
<td>52.8kg</td>
</tr>
</tbody>
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Session Topics

1. Developments of sports equipment
   Improvement of safety and performance for sports goods (i.e. Footwear, Bats, helmets etc.)

2. Human body movement (Biomechanics)
   Measuring body movement
   Performance evaluation
   Training
Developments of sports equipment
Kenta Moriyasu, ASICS Corporation
Functional Footwear Design
Matt Vacek, Jarden Team Sports
State-of-the-Art Composite Design and Manufacturing for Sports Equipment

Human body movement
Allison Sheets, Nike
Dynamics and Biomechanics in Sports
Kei Aoki, National Institute of Advanced Industrial Science and Technology
Biomechanical Analysis of Motion of Professional Baseball Pitchers