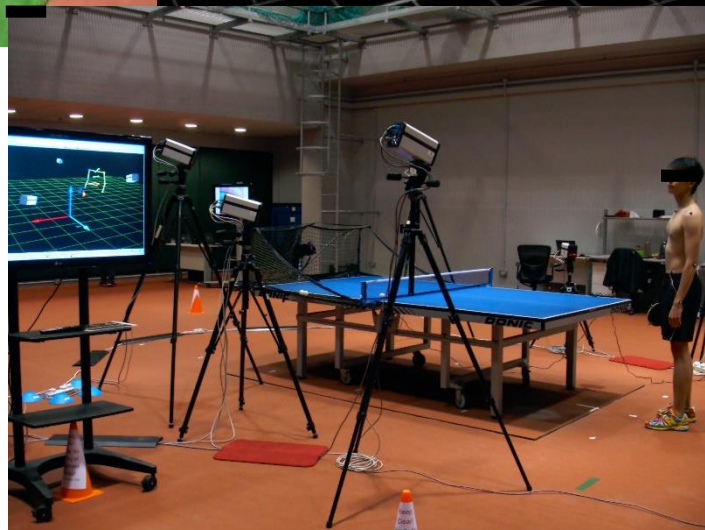
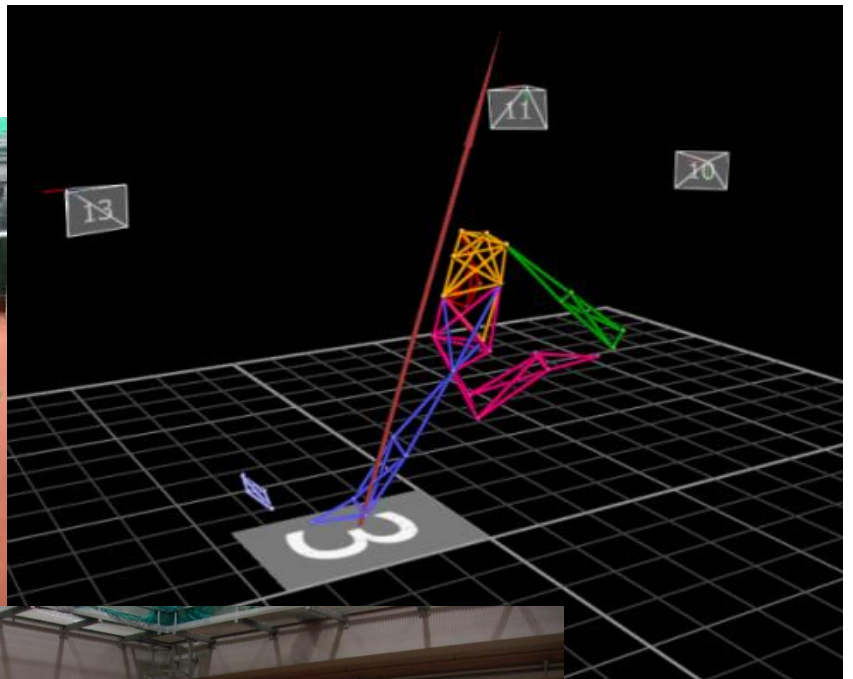


National Biomechanics Day April 11, 2018



<p>Background</p>	<p>National Biomechanics Day 2018 is a world-wide celebration of Biomechanics in its many forms for high school students and teachers. Over 9000 high school students and hundreds of teachers around the world participated in National Biomechanics Day 2016. Participants got to appreciate how Biomechanics combines Science, Technology, Engineering, Art and Mathematics to enhance human endeavours. This year, the Singapore Sport Institute (SSI) and the National Institute of Education (NIE), Nanyang Technological University (NTU) will be celebrating National Biomechanics Day 2018 by providing an opportunity for secondary school, junior college and tertiary students and teachers in Singapore to gain an insight on the application of Biomechanics to enhance performance in sport. This is especially relevant to secondary school students who are taking Exercise and Sports Science as a Cambridge GCE O'Levels subject whereby Biomechanics will feature for the first time. Please visit www.nationalbiomechanicsday.asbweb.org for more information.</p>
<p>Learning Objectives</p>	<ul style="list-style-type: none"> • Understand how optimizing the interaction of an athlete's 'Structure, Strength and Skill' could enhance performance in sport and prevent injuries • Gain insight on the application of Neuromuscular Biomechanics, Sport Biomechanics and Motor Control Knowledge to improve performance in sport and prevent injuries • Understand how to measure then assess perceptual-skill and motor-skill, and subsequently make recommendations for skill acquisition • Gain insight on how Sport Biomechanics is integral to the enhancement of performance and prevention of injuries for elite Team Singapore athletes
<p>Activity Outline</p>	<p>A group of maximally 30 students and teachers will attend 1 out of 5 sessions, each lasting 1.5 to 2 hours, held at the Sport Biomechanics Laboratory in SSI. In each session, a trainer; either a Sport Biomechanist from SSI, a Biomechanics Lecturer from NIE, or a Master student from NIE; will guide the students through various stations and activities. Underlying Biomechanical principles relating to those activities will be covered and there will be opportunities to perform various Biomechanical measurements. The activities include:</p> <ol style="list-style-type: none"> 1) Understanding and performing the proprioceptive neuromuscular facilitation (PNF) muscle-stretch technique to increase the range of motion of limbs 2) Understanding and participating in a functional movement screen (FMS); a battery of 7 functional movements namely the deep squat, inline lunge, hurdle step, shoulder internal-external rotation/mobility, active straight-leg raise, trunk stability push-up rotary stability; followed by scoring these movements to assess an individual's functional strength 3) Understanding and utilizing selected video technology (2D & 3D) to capture and assess movement skills 4) Exposure to eye tracking for the assessment of visual search behaviours and by inference, visual-perceptual skills 5) Understanding and utilizing radar to assess velocities of various movements 6) Understanding and participating in the measurement of forces related to different movement skills

	Students need to make their own way to SSI. Registrations will be on a first-come-first-served basis.
Disclaimer	<ul style="list-style-type: none"> • Students and teachers need not have a Sports Science background. A student will be able to understand some of these concepts and in turn, apply them to assess and/or improve functional movements and sporting techniques for themselves and/or others to ultimately improve performance. • Registrations will be on a first-come-first-served basis. The hosts retain all rights to decide on the format and execution of the session to ensure that all participants' learnings are maximized and safety is not compromised. • Students and teachers will have to make their own way to the Sport Biomechanics Lab at the Singapore Sport Institute, Sport Singapore
Session 1	11/04/2018 0800 - 1000
Session 2	11/04/2018 1000 - 1200
Session 3	11/04/2018 1200-1400
Session 4	11/04/2018 1400-1600
Session 5	11/04/2018 1600-1800
Venue	Sport Biomechanics lab at Singapore Sport Institute
Address	3 Stadium Drive, Singapore 397630
Contact personnel	<p>Ms Goh Wan Xiu goh_wan_xiu@sport.gov.sg Associate Sport Biomechanist, Singapore Sport Institute, Sport Singapore</p> <p>Dr Marcus Lee marcus_lee@sport.gov.sg Team Lead, Senior Sport Biomechanist, Singapore Sport Institute, Sport Singapore</p> <p>Associate Professor Veni Kong puiwah.kong@nie.edu.sg Deputy Head, Physical Education and Sports Science Academic Group, National Institute of Education, Nanyang Technological University</p>