

Keynote Speaker: 11 July 2013 – 09:20

Dr Ken van Someren
Director of Research & Development
GlaxoSmithKline Human Performance Lab.

Dr Ken van Someren joined GlaxoSmithKline (GSK) in 2013 as Director of R&D for the GSK Human Performance Lab. The GSK Human Performance Lab. provides scientific support to its high performance partners and leads discovery research to understand and break through the limits of human performance. Prior to joining GSK, Ken was the Director of Science for the English Institute of Sport (EIS), leading and developing the scope and impact of sport science support to TeamGB and ParalympicsGB at the London 2012 Games, where Great Britain achieved historic success.



Ken gained his BSc (Hons) in Sport Science and his PhD in applied exercise physiology alongside representing the Great Britain Sprint Canoe & Kayak team at four world championships. He subsequently started his career in academia, where he combined teaching and research with consultancy to a wide range of sports teams and athletes.

With an unrivalled experience in applied sport science, Ken has a world-class reputation in the support of the elite athlete community. Ken's own research interests are largely in the area of elite performance enhancement, training adaptation and recovery – topics on which he has published extensively. Ken sits on numerous boards and panels to government departments, industry and academia in the U.K.

London 2012: The Science behind the Medals

Great Britain achieved historic success at the London 2012 Olympic and Paralympic Games, with sport science playing a greater role than ever before. This presentation will provide a brief overview of the structure and organisation of elite sport in the UK that has facilitated this success.

By highlighting specific examples – including athlete optimisation of training techniques and competition performance strategies – the role and impact of sport science, medicine and technology in the U.K. will be discussed, demonstrating the multidisciplinary philosophy and approach taken to supporting elite athletes.

A home Games afforded an unprecedented opportunity for collaboration between sport, academia and industry, bringing together expertise in science, medicine, technology and engineering and supporting a stepwise development in knowledge and practice in the U.K. This together with continued funding for elite sport provides a platform for sustained development and impact on sports performance in Rio 2016 and beyond.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Keynote Session Chair – London 2012: The Science behind the Medals

Associate Prof. Denny Lie Tijauw Tjoen
Associate Prof. & Co-director
Nanyang Technological Institute

Dr Denny Lie completed his medical undergraduate studies in 1991 from the National University of Singapore (NUS). He went on to complete his orthopaedic surgical training in 1997. From 2001 - 2003, Dr Lie completed his PhD research in Biomechanics at the Imperial College, University of London, UK. He then returned to practice in the Singapore General Hospital since 2004. Dr Lie held National Medical Research Council Fellowships in 1999 and 2001 – 2003, and awarded the HMDP Fellowship for Sports Medicine in 2001.

He currently holds appointments in the Nanyang Technological University as an adjunct Associate Professor in the School of Mechanical and Aerospace Engineering, and Co-Director in MSc Course in Biomedical Engineering. He was also Resource Advisor (Orthopaedic) in the MOH YOG Medical Services Committee in 2010. Dr Lie's outstanding performance in education as well as medical expertise has led him to receive numerous awards such as SGH Service Quality Award in 2004 and 2008, and Orthopaedic Teaching Excellence Award (NUS) in 2005 and 2006.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Speaker: 11 July 2013 – 10:45

Dr Trisha Leahy
Chief Executive
Hong Kong Sports Institute

Trisha Leahy (Ph.D, Psychology) is the Chief Executive of the Hong Kong Sports Institute, the Government's delivery agent for elite sport systems.

With over 30 publications in international academic and professional publications and numerous keynote and invitational presentations Dr Leahy is an internationally recognized expert on gender issues and creating safe environments for young people in high performance sport systems.



She was an invited member of the International Olympic Committee (IOC) Medical Commission's expert consultative committee on the prevention of abuse in sport, which produced an IOC position paper on the issue in 2007. She was also an invited member of a UNICEF international expert panel advising on research and policy strategies to prevent violence against children in sport from 2007-2009. Locally, Dr Leahy is extensively involved in voluntary community work, serving as consultant/ advisor to key NGO's in the social welfare sector.

She was the 2006-2007 President of the Hong Kong Psychological Society and is currently an Academic Advisory Panel member at three local Universities. Dr Leahy is a Member of the HK SAR Women's Commission and the Equal Opportunities Commission.

Child Protection in Elite Training

The recent documentation of abuse and violence in sport has challenged our consensus vision of sport as a positive, empowering environment for young people. This has led to a more critical analysis of the sporting environment and its impact on young people. The IOC Medical Commission responded to this issue in 2005/6 by setting up an expert committee to review the situation. This resulted in the IOC formally establishing a consensus statement "Sexual Harassment and Abuse in Sport" in 2007, through which the IOC reminds NOC's to embed child protection guidelines and policies into elite sports systems.

Within elite sport systems, the scientific biopsychosocial paradigm underpins the development elite athletes and provides an appropriate platform of engagement for professional support staff to contribute their expertise to ensure that elite athletes are trained in an environment of safety. In this presentation I will provide a critical review of current trends in elite athlete development from a child protection perspective.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Speaker: 11 July 2013 – 10:45

Dr Low Chee Yong
Head of Sport Science Services / Senior Sport Physiologist
Singapore Sports School

Dr Low Chee Yong is a graduate from the School of Sport and Exercise Science at the University of Western Australia. He completed his PhD in the area of exercise physiology and biochemistry. In 2009, he joined Singapore Sports School as a Sport Physiologist. Prior to joining Singapore Sport School, Dr Low worked as an exercise physiologist for three years in a clinical setting dealing with the sedentary population.



His research findings had been presented in several international conferences and to date, he has several published research articles on diabetes management and Ramadan and exercise. His current research interests include salivary alpha amylase biomarkers, repletion of glycogen post-exercise and sport physiology in youth training.

Mr Sofyan Bin Sahrom
Strength and Conditioning Coach
Singapore Sports Institute

Sofyan is a certified strength and conditioning specialist (CSCS*D) and coach with organisations such as the National Strength and Conditioning Association (NSCA) and the Australian Strength and Conditioning Association (ASCA). Sofyan has been coaching since 2004, both youth and adult athletes across a wide spectrum, from recreational to elite. Prior to joining SSI S&C Team, he was an S&C Coach at the Singapore Sports School for over 6 years.



He is also a qualified Rugby, Track & Field and Weightlifting coach and has served in various sports science disciplines from Sports Trainer to Laboratory Officer. Sofyan believes in an integrated approach to coaching. On the sports science front, Sofyan is a qualified Sports Scientist (ASP) with Exercise and Sports Science Australia (ESSA) in the area of Strength Science and Biomechanics.

Sofyan's professional interests include, periodisation and programming, biomechanics of movement and muscle contraction, and muscle physiology. His Master's thesis focused on understanding the stretch shorten cycle across the different maturational stages. He is concurrently pursuing a Bachelor of General Studies degree.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Singapore Sports School Long Term Athlete Development (LTAD) Model: Maturity status and physical performance in student athletes

Enhancing the physical and technical abilities of athletes during adolescence to maximise athletic success at an adult age is not a novel concept as evidenced by earlier youth-based training programs. Balyi's LTAD model suggested that through objective physiological assessment tools, coaches can account for individual maturation rates and utilize the concept of "windows of trainability" to accelerate and enhance physical development eg. speed and aerobic fitness.

This presentation will discuss the use of peak height velocity to compare the longitudinal changes in the physical development using the longitudinal fitness data of SSP student athletes and evaluate the concept of windows of trainability from the age of 13 to 16 years in Singapore Sports School.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Speaker: 11 July 2013 – 10:45

**Mr Ralf Iwan
Head Coach (Track & Field)
Singapore Sports School**

Ralf Iwan, looks back to an international career in professional sport, both in coaching and management, of more than 17 years. He had assignments with German Athletics Federation, UK Athletics, Athletics South Africa, and ASPIRE Academy for Sports Excellence in Qatar where he worked as Head Coach for Athletics and Head of Strength & Conditioning. He is currently the Head Coach for the Track&Field Academy at the Singapore Sports School, where he leads a team of five coaches and is responsible for the performance and well-being of 85 student athletes.



During this career he coached athletes on world-class and Olympic level from Scotland, England, South Africa, Netherlands, Germany and Qatar. However, his specialty is long-term athlete development with German, British and Qatari athletes. Some of his international athletes were former German national junior record holder in the pole vault Lars Börgeling (5.62m), Mahamad Almanai from Qatar who won the silver medal at the 2009 IAAF World Youth Championships in the Octathlon, South African pole-vaulter Elmarie Gerrits (4.45m), Jamie Quarry from Scotland who the bronze medal in the decathlon at the 2002 Commonwealth Games in Manchester. Besides the coaching diploma from the Coaches University in Cologne, the 46year old holds a MBA degree from the University of Salzburg, with the speciality in Quality Management. The former decathlete is still a very active athlete playing tennis, basketball and golf and enjoying running and gym training.

**World Class Athletes: Born or made ?
Nurturing the sporting talent to the global stage**

Long-Term Athlete Development (LTAD) has become a buzzword in the international world of sport in recent years. Identifying and nurturing sporting talent is a long process, which requires often a rather holistic approach in training and management to lead the way to the podium.

In his presentation, Ralf Iwan describes the pathway of two athletes he personally coached and nurtured from youth age to the first international success at a World Championship. The examples of former German pole vault junior-record holder Lars Boergeling and Qatari decathlete Mahamad Almanai, both are from different nationality and from a different sport cultural background, have won medals at the IAAF World Junior and World Youth Championships and progressed later to the Olympic finals. The presentation describes the detailed planning and management of their careers, including academics, sport science and competition planning and concludes with some recommendations how athletes pathways should be managed to make the most of their talent.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Speaker: 11 July 2013 – 10:45

Dr Ong Wee Sian

Senior Consultant, Sports Physician

University Orthopedics, Hand and Reconstructive Microsurgery Cluster

National University Hospital

Dr Ong Wee Sian completed her basic medical degree in National University of Singapore (NUS) in 1993. She went on to pursue a postgraduate training in Sports Medicine through the Australian Institute of Sport in 1997 while working for the Singapore Armed Forces (SAF) medical corps. She left the SAF after 11 years to continue her clinical practice in the restructured hospitals.



Before joining NUH, she was the Head of the Sports Medicine Service at the KK Women's and Children's Hospital. She is an appointed member of the sub-speciality training committee for sports medicine under the Joint Committee on Specialist Training (JCST), Ministry of Health.

Health Issues of Female Athlete

Female athletes are more susceptible to certain musculoskeletal injuries such as anterior cruciate ligament tear. Anatomical, hormonal, biomechanical and neuromuscular risk factors have been found to contribute to this gender difference; modifying some of the risk factors may help to reduce injuries in female athletes. There is also a high prevalence of menstrual dysfunction among female athletes. Intense training combining with inadequate energy intake may disrupt the secretion of estrogen, an important hormone for maintaining the menstrual cycle and bone mass.

Low level of estrogen can subsequently result in amenorrhea (absence of menstruation), increased risk for stress fractures and early osteoporosis (fragile bone). The significance of "athletic amenorrhea" was recognized by the American College of Sports Medicine in 1992 and the term "Female Athlete Triad" was coined to describe the 3 interlinked medical conditions found in female athletes – disordered eating, menstrual dysfunction and low bone mass/osteoporosis.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Chair – Youth & Female Issue in Elite Sport

Dr Jason Lee
Principal Member of Technical Staff (Group Head, Physiology)
Defense Medical & Technological Research Institute
DSO National Laboratories

Jason graduated top of his cohort with a first class honours in Sports and Exercise Science from Loughborough University, UK. He pursued a PhD in Exercise Physiology under sponsorship from the UK Overseas Research Scholarship and Faculty Studentship. Jason is a Fellow of the American College of Sports Medicine. He sits on the Editorial Board of the Extreme Physiology & Medicine journal and referees for 17 different international peer-reviewed journals.

His main research interests are in extreme physiology, fluid balance and mitigation strategies to improve human performance in the heat. Capitalising his experience as a former Commando Officer in the Singapore Armed Forces, Jason applies his academic knowledge to his work by functioning as the Lead Physiologist in DSO. He serves an Adjunct Assistant Professor at the medical schools in National University of Singapore and Nanyang Technological University.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Breakout Session Speaker: 11 July 2013 – 14:00

Michele MacNaughton
Sport Psychologist
Singapore Sports Institute

Michele is a former South African Olympian. She has an MSc in Sport Psychology (UK) and over ten years of experience in high performance sport and business.



Michele has worked cross culturally in South Africa, London and Brisbane consulting in the field of performance psychology. As a former international hockey player and coach, she is able to fast-track the identification of relevant issues that impact performance, both on and off the playing field.

She uses a strength-based approach to integrate psychological skills into training and competitive performance, and to develop mentally tough competitors across various ages, abilities and sports. Biofeedback and neurofeedback are an integral part of her service delivery to enable athletes to reach their peak performance.

As an accredited NLP Sport Practitioner, Michele has trained extensively in the area of Emotional Intelligence and is a current member of the Australian Psychology Society and British Psychology Society.

Michele loves a challenge and recently completed a 5000-km self support cycle across Patagonia – the ultimate test of our physical and mental endurance.

Psychological Preparation in Elite Sport:

A World Champion Performance: Shayna Ng - Singapore Bowling

This presentation will provide an insider view into the 2012 World Champion Bowling Performance of Singapore bowler - Shayna Ng. The case study presents the reflections of athlete, coach and sport psychologist on the psychological preparation and mindset required for a World Class Bowling Performance. It will consider a number of psychological questions:

- The unique athlete-coach relationship that is required in the sport of bowling.
- How to produce a peak performance when bowling for a World Championship or \$100,000 in prize money.
- How to manage the emotions and nerves that come with high pressure self paced sport where there is nowhere to hide.
- The importance of self belief and opportunity

The system approach of Singapore Bowling that consistently produces world-class talent.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Breakout Session Speaker: 11 July 2013 – 14:00

Dr Kim Youngsook
Researcher / Ph.D. (Sports Psychology)
Korea Institute of Sport Science

Dr. Kim joined Korean Institute of Sport Science as a Researcher specialising in Sport Psychology; where she supported the Korean National Archery Team since 2011.

She has over 10 years of experience working with various sports teams as a psychological skills consultant focusing on team-building, relaxation, imagery, concentration, etc. Dr. Kim received her PhD in Physical Education (Sports Psychology) from Seoul National University.



Her research topic was on the development and application of sport team-building program through group counselling approach.

The Field Application of Sport Psychology for Korean National Archery Team

Korean Archers have won medals in Olympics, Asian Games, and international competitions since the 1980's. However, Korean national archers sometimes did not show their best performance because of psychological problems. In archery, psychological strength is critical for peak performance as well as archery skills. Korean national archers have focused on psychological training as well as archery skills training.

In the London 2012 Olympics, psychological training and individual counseling approach were applied to Korean national archers. It consisted of 4 stages such as, education and assessment, development, application in practice, and application in competition. Along with athletes' limitless efforts, coaches' support, and cooperation with a sport psychologist, Korean archers demonstrated their peak performance in during the Games.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Breakout Session Chair – Psychological Preparation in Elite Sport

Dr Peter Usher
Sports Psychology Consultant

Dr. Peter Usher has been providing applied sport psychology services for over 30 years to athletes in their early developmental years through to elite Olympians and professional athletes. From 1992-96, Dr. Usher served as the Sport Psychologist with the Singapore Sports Council. Peter later returned to Singapore and took the post of Senoir Sport Psychologist at the Singapore Sports School in 2004.

In addition to his sport psychology role, Peter has been a coach educator with the Coaching Association of Canada. He played a role in the curriculum development for Canada's National Coaching Certification Program and was a Master Course Conductor. In this role, Peter first visited Singapore to conduct the NCCP Level 3 to Singapore's National coaches in 1991.

In more recent years, Dr. Usher has been a visiting lecturer in Applied Sport Psychology at the University of Bedfordshire (UK). While visiting England, Dr. Usher worked with professional football teams and provided sport psychology services to the athletes at Bedford School, an independent boy's school. Their Under 15 rugby team won the English Schools championship in 2006 and 11 of the boys were schoolboy internationals in 5 separate sports.

Peter is currently co-ordinating the high-performance program in the Football Academy at Fenerbahce SK in Istanbul and the Canadian Tenpin Federation (bowling) and will be mentoring the sport psychologists with the SSI.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Breakout Session Speaker: 11 July 2013 – 14:00

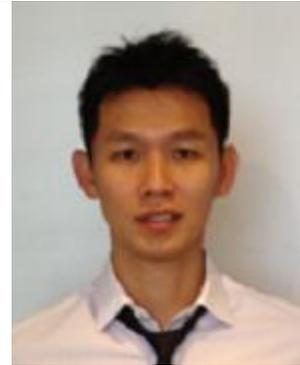
Dr Jason Lee

Principal Member of Technical Staff (Group Head, Physiology)

Defense Medical & Technological Research Institute

DSO National Laboratories

Jason graduated top of his cohort with a first class honours in Sports and Exercise Science from Loughborough University, UK. He pursued a PhD in Exercise Physiology under sponsorship from the UK Overseas Research Scholarship and Faculty Studentship. Jason is a Fellow of the American College of Sports Medicine. He sits on the Editorial Board of the Extreme Physiology & Medicine journal and referees for 17 different international peer-reviewed journals.



His main research interests are in extreme physiology, fluid balance and mitigation strategies to improve human performance in the heat. Capitalising his experience as a former Commando Officer in the Singapore Armed Forces, Jason applies his academic knowledge to his work by functioning as the Lead Physiologist in DSO. He serves an Adjunct Assistant Professor at the medical schools in National University of Singapore and Nanyang Technological University.

Hydration During Exercise: So How Much Should We Drink?

There is still an ongoing debate on the correct amount to drink during exercise. The American College of Sports Medicine recommends that athletes drink to prevent dehydration in excess of 2% body mass loss. In many cases, this would mean drinking beyond one's thirst. However, the notion of drinking according to thirst is becoming more widely accepted as thirst is increasingly being recognized as the best physiological indicator of fluid requirements during exercise.

Elite marathon runners complete races with up to 9.8% of body mass loss. When *ad libitum* drinking was compared with drinking to prevent a 2% body mass loss, laboratory findings showed that drinking *ad libitum* was at least as effective, if not better. The International Marathon Medical Directors Association recommends that athletes drink *ad libitum* no more than 0.4 – 0.8 L/hr. So much should we really drink?

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Breakout Session Speaker: 11 July 2013 – 14:00

Ms Maki Shibasaki
Nutritionist
Japan Sports Council

Ms. Shibasaki started her career as the sport nutritionist in various teams such as Junior Youth Football team of J League, swimming clubs, and athletic team of company. When she worked for Sport Science Training Center in Gifu prefecture between 2006 and 2008, she provided nutritional education and services in a wide range of sports including boxing, wrestling, table tennis, baseball, cycling, cross-country skiing, and alpine skiing etc.



Since 2008, she then became the nutritional service provider in Multi-Support Project of Japan Sport Council specifically worked for the Japan National Team of Judo and Swimming up to current.

Nutrition for Recovery in Swimming and Judo towards London 2012

Recovery is vital for elite athletes to maximize their performance. Particularly, the energy intake must be sufficient to support recovery during the competition. The determining factors for the sufficient energy intake include individual characteristics and needs, training and competitive environment, and the competition format (e.g., time, period, repetitiveness, and the length of breaks). Thus, it is important to carefully plan, monitor, and adjust the recovery strategy based on the detailed investigation of the sport and athletes for years.

The types of sport influence the recovery strategy during the competition greatly. Swimming is the power sport that does not require glycogen loading such as marathon or triathlon. Athletes, however, need enough energy intakes during the competition because athletes do a few races (e.g., preliminary, semi-final, and final) in one day and another races within a few days. In judo that is the weight category events, the process of weight-loss and recovery right after weigh-in affect the athlete's condition enormously. Unlike swimming, it is necessary to pay more attention to the process of energy intake because there is little and unpredictable time of rest in-between each competition toward final. For the presentation, the different nutritional strategy to support swimming and judo national team in their preparation toward and during London 2012 will be discussed.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Breakout Session Chair – Nutrition for Sports Performance

Ms Huang Liyan
Sports Dietitian
Singapore Sports Institute

Liyan is a sports dietitian with the Singapore Sports Institute. She holds a Bachelor degree in Food Science and Technology and a Masters Degree in Nutrition and Dietetics. Prior to joining SSI, Liyan worked at a local research institute where she conducted studies aimed at improving the health and performance of soldiers and athletes through nutrition.

Her research interests include understanding eating behaviours of athletes and the impact of glycemic index on mental performance and skill-based sports. Liyan is an accredited dietitian with the Singapore Nutrition and Dietetics Association and Dietitians' Association of Australia.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Breakout Session Speaker: 11 July 2013 – 16:00

Mr Shaunak Ahuja
Senior Application Analyst
Advanced Digital Sciences Center

Shaunak Ahuja is the Senior Application Analyst at the Advanced Digital Sciences Center (ADSC). Prior to joining ADSC, he was involved in several projects that focus on exploiting computer vision techniques for real world applications.

After earning his degree in May 2009, he initiated and worked on a project for automated sports video analysis in Champaign-Urbana, Illinois, USA, which subsequently became the Semantic Analysis of Video project at ADSC in August 2011.

His previous experience includes development of the Hemispherical Video Camera at Vision Technology in Champaign-Urbana. His primary interest is in applying computer vision techniques in the sports domain.



AutoScout: Automatic Sports Video Analysis

In order for sports teams to best prepare for upcoming matches or review past performances, teams analyse video of previous games and practices. This is one of the most time-consuming tasks for a coach. Since time is at a premium, we aim to automate certain aspects of film study, thus saving valuable time.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Breakout Session Speaker: 11 July 2013 – 16:00

Dr Marcus Lee
Sports Biomechanist
Singapore Sports Institute

Dr Marcus Lee is a Sports Biomechanist with the Singapore Sports Institute. He currently works with the Singapore national athletes from various sports in a bid to improve their performance and prevent injuries.

Dr Marcus Lee's applied/research interests include improving visual-perceptual-movement skill to enhance sporting performance and prevent musculoskeletal injuries, applying 3D visualisations in laboratory settings to simulate game environments for research and athlete-training, and developing technology for performance enhancement.

Dr Marcus Lee graduated with a PhD in Biomechanics and Skill Acquisition, a first-class Honours in Biomechanics, and a Bachelor in Science with Double Majors in Psychology and Human Movement.



Intercepting a 3D versus 2D videoed opponent: Visual search and reaction time differences

This research aimed to identify differences in 1) visual search and 2) reaction time when athletes sidestepped to intercept 2D versus 3D videoed opponents.

A customized Integrated Stereoscopic System projected the video stimuli, and synchronously recorded the gaze and motor behaviours (reaction time) of 10 males when they responded to 2D and 3D opponents. Participants spent 16% less time fixating on the trunk and 23% more time outside the 3D opponent's body compared with the 2D stimulus. No reaction time differences were found.

Although participants fixated less on the 3D opponent's body and, by inference, invested less perceptual processing toward interpreting the opponent's movements compared with the 2D condition, they performed the interception task equally fast in both conditions. Three-dimensional depth cues may provide more meaningful information per fixation for successful task performance. This advantage over 2D displays may, however, depend on the complexity of the visual-perceptual-motor task.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Breakout Session Chair – Performance Analysis & Technology In Sport

Dr Low Chee Yong

Head of Sport Science Services / Senior Sport Physiologist

Singapore Sports School

Dr Low Chee Yong is a graduate from the School of Sport and Exercise Science at the University of Western Australia. He completed his PhD in the area of exercise physiology and biochemistry. In 2009, he joined Singapore Sports School as a Sport Physiologist. Prior to joining Singapore Sport School, Dr Low worked as an exercise physiologist for three years in a clinical setting dealing with the sedentary population.

His research findings had been presented in several international conferences and to date, he has several published research articles on diabetes management and Ramadan and exercise. His current research interests include salivary alpha amylase biomarkers, repletion of glycogen post-exercise and sport physiology in youth training.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Breakout Session Speaker: 11 July 2013 – 16:00

Mr Julian Lim
Strength & Conditioning Coach
Singapore Sports Institute

Julian Lim is a strength and conditioning coach at the Singapore Sports Institute, where he implements sport-specific training programmes for the national and elite level athletes.

His current portfolio includes athletes competing in badminton, basketball, bowling and shooting. He endeavours to research and utilise evidence-based strength training principles to enhance an athlete's sporting performance

Julian received his Master Degree in Research from the National Institute of Education, Nanyang Technological University. His thesis focused on the application of post-activation potentiation in enhancing the performance of the national sprinters. Previously, Julian graduated from Edith Cowan University in Perth, Australia with a Degree in Sports Science, majoring in Human Performance.

Other than being a NSCA Certified Strength and Conditioning Specialist (CSCS), Julian is also an AWF Level 1 Club Weightlifting and Sports Power Coach and an IAAF Level 1 Youth Track & Field Coach.



Mr Sofyan Bin Sahrom
Strength and Conditioning Coach
Singapore Sports Institute

Sofyan has been coaching since 2004, both youth and adult athletes across a wide spectrum, from recreational to elite. Prior to joining the SSI S&C Team, he was an S&C Coach at the Singapore Sports School for over 6 years. He is also a qualified Rugby, Track & Field and Weightlifting coach and has served in various sports science disciplines from Sports Trainer to Laboratory Officer.

Sofyan believes in an integrated approach to coaching. On the sports science front, Sofyan is a qualified Sports Scientist (ASP) with Exercise and Sports Science Australia (ESSA) in the area of Strength Science and Biomechanics.

Sofyan's professional interests include, periodisation and programming, biomechanics of movement and muscle contraction, and muscle physiology. Sofyan received his Bachelor Degree in Science (Sports Science) from Edith Cowan University in Perth, Australia. He has also completed his Masters in Sports and Exercise Science at the Auckland University of Technology, New Zealand. His thesis focused on understanding the stretch shorten cycle across the different maturational stages. He is concurrently pursuing a Bachelor of General Studies degree.



Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Mr Jeremy Ng
Assistant Strength & Condition Coach
Singapore Sports Institute

Jeremy is assistant strength and conditioning coach at the Singapore Sports Institute. His current portfolio includes table tennis, swimming, sailing, golf, and diving. He supports the teams in terms of implementing and executing strength and conditioning programs. He also accompanies teams for overseas training camps to ensure the S&C programs are executed appropriately. Jeremy's interest is in translating research findings to practical applications for athletes to improve their performance and reduce the occurrences of injuries.



Jeremy received his Bachelor Degree in Science (Sports Science) from the University of Western Australia in Perth, Australia. He is currently pursuing his Masters in Exercise and Sports Studies from the National Institute of Education, Nanyang Technological University.

Mr Scott Vanderput
Assistant Strength and Conditioning Coach
Singapore Sports Institute

Scott Vanderput is an Assistant Strength and Conditioning Coach at the Singapore Sports Institute. He provides various strength and conditioning programs to sports like canoeing, waterpolo, disability athletes, rowing, sailing and hockey. Apart from this, he also travels with teams for overseas competition to ensure the S&C programs are kept running smoothly and ensuring injuries are managed properly or prevented altogether. Scott's interest is in functional training and the prevention of injury through strength and power training in team sports - coming from a team sport background himself.



Scott received his Bachelor Degree in Sports Science (Exercise Science) from the Edith Cowan University in Perth, Australia. He is currently a qualified Level 1 IRB rugby coach and is now in the process of obtaining his Certified Strength and Conditioning Specialist (CSCS) certification.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Functional movement screen (FMS) and corrective exercises

Significant limitations in movement patterns are often seen in athletes active in sports, such as golf and tennis etc., where the left-right imbalances result in movement compensations. The functional movement screen aims to identify weak links in movement patterns and assign exercises to correct it. When this is accomplished, the athlete will have greater movement efficiency, which will lead to improved performance and decrease in injury potential. This workshop will involve practical demonstration and participant involvement.

Breakout Session Chair – Functional Movement Screen and Corrective Exercise

Mr Abdul Rashid Aziz
Head, Strength and Conditioning Unit
Singapore Sports School

Rashid is currently working with national athletes from Badminton, Hockey, Netball, and Disability Swimming and works closely with the national coaches in the testing, training and preparation of athletes for competition.

Rashid has been actively conducting research with athletes and is a pioneer in research investigating emerging Asian-dominated sports such as Sepak Takraw and Pencak Silat. His research interest lies in the practical applications of research findings to help coaches and enhance athletes' performance.

Rashid started his involvement with sports in Physical Education before completing his undergraduate degree at the University of Alberta, in Canada. Currently pursuing his Ph.D., Rashid is in the midst of completing a series of studies investigating the physiological effects of Ramadan fasting on competitive sporting performance and training; and designing ways to reduce or circumvent the impact of Ramadan fasting on Muslim athletes' performance.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Keynote Speaker: 12 July 2013 – 9:00

Prof. Takashi Katsuta
Director
Japan Sports Council

Mr. Katsuta began his coaching career as Japan National High School Coach of Japan Rugby Football Union (JRFU) in 1989. Since then, he played several roles in JRFU such as the coach for U-23 and U-19 Japan National Team (1995-96), the technical director for Japan National Team (1997-2001), Chef de Mission for the Japan National Team (2003-2004), and performance director (2003 - 2005).



He is currently executive board member of JRFU as well as the member for strategic planning for Rugby World Cup 2019. With his knowledge and experience, Mr. Katsuta is committed in coaching education and has taught a number of sessions such as JOC National Coach Academy (2008 - current), Coaching Seminar organized by Japan Sport Association (2005 - current), and in Sport Coach Development Course (2005 - current).

He currently serves as a number of important roles in Japan Sport Council, Japan Olympic Committee, Japan Amateur Sport Association, National Training Center, and Japan Rugby Football Union, Mr. Katsuta is one of the most influential leaders for the development of Japanese sports for decades.

Competitive Coaching – The Next Generation Entrusts Sport to Us

What is coaching? The essence of coaching is “contribution to develop a person as a whole.” It should not be limited merely in improving athlete’s sport skills or physical strength by “teaching.” Coaching is the technical format of inspiring and encouraging one’s the autonomy and spontaneity to grow. There is a need for discussion to discover the value and responsibilities of coaching in global context once again. In the presentation, the essential factors to be considered for “good coaching” will be discussed from the comprehensive, essential, and broad point of view.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Keynote Session Chair – Building a Multidisciplinary Team in Competitive Sport Coaching

Dr James Goh
Professor & Head, Department of Bioengineering
National University of Singapore

Dr James Goh is currently the Head of the Department of Engineering in the National University of Singapore (NUS). He had previously served as Director of Research, Orthopaedic Surgery and Coordinator of Orthopaedic Diagnostic Centre, National University Hospital of Singapore (NUHS). James graduated with a Bachelor of Science with 1st Class honours in Mechanical Engineering and a PhD in Bioengineering from the University of Strathclyde, Glasgow, UK.

Dr James is the President, Biomedical Engineering Society (Singapore), and Secretary General of the International Union of Physical and Engineering Science in Medicine and President-elect of the Federation of Medical and Biological Engineering. He also holds key positions in several professional societies such as the Asian-Pacific Association for Biomechanics, World Association for Chinese Biomedical Engineers, and World Council of Biomechanics.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Speaker: 12 July 2013 10:30

**Assistant Prof. Zhao Peng
Professor & Department Director, Health & Rehabilitation Research Centre
China Institute of Sports Science**

In 2005-2012, Asst Prof Zhao Peng have been acting as the scientific coach and research team leader in men's national weightlifting team; in 2009-2010, as the research team leader and medical team leader in the third wrestling team. He has worked in Beijing Red Star Hospital as its Orthopaedic Resident Physician.

Also, he has carried out over 10 research projects as the Project Director, published 2 monographs and participated in the compilation of 4 books; published 13 papers in the key journals as the first author.



He won the second prize of The Individual Award of Outstanding Contribution to the 2008 Beijing Olympics, the first prize of Scientific Research and Service for 29th Olympics, the third prize of Scientific and Technological Award by China Sport Science Society, the second prize of Scientific Research and Service for 29th Olympics.

The Weight Management of Athletes

In weightlifting, boxing and other athletics projects whose competition level are segregated according to weight classes for participation, the athletes must meet the required weight classes prior to weigh-in. The athletes often take the combination of the following methods to achieve the ideal body weight:

- The Daily Slowly Weight Controlled Method
- The Slowly Weight Reduction Method before the Athletic Competition and
- The Rapid Reduction Body Weight Method before the Athletic Competition

This presentation will share its key point on weight management - how to maintain the control of drop weight effects on the athlete's athletic ability so as to guarantee participation and achieve good results.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Speaker: 12 July 2013 – 10:30

Dr Raymond So
Director, Elite Training Science and Technology
Hong Kong Sports Institute

Dr. Raymond So has been actively involved in research of sports training and sports medicine for many years. His major responsibility in Hong Kong Sports Institute is to coordinate sports science, sports medicine and physical training supports to the Hong Kong elite athletes for the purpose of performance enhancement.



Dr. So has done extensively on studying windsurfing, in the areas of muscle activation patterns, physiological demand and training methods

In recent years, his research emphasis was on enhancing the performance of elite cyclists. His research areas include muscle fatigue pattern in different cycling techniques, energy utilization during different types of cycling competition and recovery modalities. His research work is recognised by the number of research papers, which is over twenty published in the international academic and professional journals and numerous keynote and invitational presentations. For the promotion of Sports Science and Medicine in Hong Kong, Dr. So has served the Hong Kong Association of Sports Medicine and Sports Science for twenty years and be the President from 2001 to 2005.

Hong Kong Sports Institute Recovery Strategy

Balancing training stress and recovery is the key for maximizing performance in elite sports. To achieve this we must monitor our athletes to determine their current stress / fatigue and then implement the appropriate recovery strategies. Therefore, athletes in Hong Kong Sports Institute, especially those in physical demanding sports receive blood and urine tests on regular base. The test results will be sent to coaches within 4 hours after the tests. Coaches can then adjust (increase or decrease) the program loading accordingly or send the athletes to receive appropriate recovery modalities.

Sports Medicine Centre provides various recovery modalities to our athletes, which include Jacuzzi, sauna, contrast bath, heat treatment, cryotherapy, sport massage, etc.. HKSI sport physiotherapists responsible for recommending and applying the appropriate modalities to each individual athlete. The blood and urine test results will also hint the need on nutrition recovery. Base on the results, our Sport Nutritionist will inform the athlete to increase the consumption on the required food.

As HKSI also provide facilities and conditioning coaches to take care the physical fitness development of our athletes, our Conditioning coaches will work with the specific sport coaches to develop a well balance program to the athletes. Moreover, the training response of the athlete is well monitored to avoid overtraining. There are 4 full time Sport Psychologists working at HKSI to facilitate the psychological methods of recovery for our athletes

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Speaker: 12 July 2013 – 10:30

Mr Md Saadon Bin A Shukor
Director, Sports Science Division
Institut Sukan Negara, Malaysia

Mr Saadon Shukor is currently the Director of Sports Science Division, National Sports Institute of Malaysia. 8 months into the job his immediate assignment is to consolidate the resources and pathway for application of Sports Science as a vital component in the high performance sports culture that Malaysia is trying to build.

A former physical educator, started as Education and Administrative Officer in NSI in 1989 before moving to various departments such as Sports Talent Development, Coaching, Research and Special Projects. A certified IOC basketball coach and former FIBA referee holds a diploma in sports massage and actively promoting and teaching the public who seek to acquire this skill as a profession.

The Olympic Dream - A Multidisciplinary Approach

The government of Malaysia has long recognized the role of sports in uniting its multiracial population. The organization of the 16th Commonwealth Games in Kuala Lumpur 1998 has reflected it's aspiration to establish a high performance culture in sports. It was further magnified by the desire to win the first gold medal in the 2008 and 2012 Olympic Games.

The task in optimizing the athletes' potential is borne by National Sports Institute through its services in sports science and sports medicine. From a humble beginning it is continuously consolidating and integrating its resources to serve the athletes by multidisciplinary approach.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Chair – Integrating Sports Science & Medicine with Coaching in Competitive Sport (Part 1)

Ms Lydia Law

**Programme Manager, Combat Protection and Performance Programme
DSO Laboratories**

Ms Lydia Law graduated with a Bachelors of Engineering in Mechanical Engineering from the Imperial College, London. She then went on to pursue a Master of Science in Mechanical Engineering at Stanford University. It was at Stanford that Lydia developed a keen interest in the area of biomechanics. Upon graduation, Lydia joined the Military Physiology Laboratory of the then Defence Medical Research Institute and began her career in defence research. She progressed from a junior researcher to a senior member of technical staff and is currently fulfilling the role of Programme manager overseeing research encompassing training effectiveness and safety within the Combat Protection and Performance domain of the Defence Medical and Environmental Research Institute, DSO National Laboratories.

Although trained as an engineer, Lydia has been extremely adaptable and has over the years, developed a strong broad base range of technical skills and knowledge both in her research interest areas of human performance, biomechanics and physiology, as well as in the management of the research and collaborations.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Speaker: 12 July 2013 – 13:45

Dr Peter Usher
Sports Psychology Consultant

Dr. Peter Usher has been providing applied sport psychology services for over 30 years to athletes in their early developmental years through to elite Olympians and professional athletes. From 1992-96, Dr. Usher served as the Sport Psychologist with the Singapore Sports Council. Peter later returned to Singapore and took the post of Senoir Sport Psychologist at the Singapore Sports School in 2004.



In addition to his sport psychology role, Peter has been a coach educator with the Coaching Association of Canada. He played a role in the curriculum development for Canada's National Coaching Certification Program and was a Master Course Conductor. In this role, Peter first visited Singapore to conduct the NCCP Level 3 to Singapore's National coaches in 1991.

In more recent years, Dr. Usher has been a visiting lecturer in Applied Sport Psychology at the University of Bedfordshire (UK). While visiting England, Dr. Usher worked with professional football teams and provided sport psychology services to the athletes at Bedford School, an independent boy's school. Their Under 15 rugby team won the English Schools championship in 2006 and 11 of the boys were schoolboy internationals in 5 separate sports.

Peter is currently co-ordinating the high-performance program in the Football Academy at Fenerbahce SK in Istanbul and the Canadian Tenpin Federation (bowling) and will be mentoring the sport psychologists with the SSI.

Evidence Based Coaching

To allow for a change in outmoded practices in player development at the football Academy of Fenerbahce SK, performance analysis was a key operational procedure. Performance analysis allows for the collection of significant data which can highlight for coaches the key performance variables that the athlete does very well, and perhaps more importantly, the performance areas that require improvement. Both the athlete's Patterns of Excellence and Areas for Improvement (AIMs) are essential elements in the athlete's profile.

The data collected from performance analysis is the evidence and is in the forefront of designing training programs from microcycles to multi-year plans. Coaching athletes based on evidence removes opinions which for so long has been the modus operandi for coaches. Evidence-based coaching (EBC) allows for a very focused approach which is effective and efficient. EBC provides an economical use of time while maximising the output of performance improvement.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Speaker: 12 July 2013 – 13:45

Prof. Hong Ping

Department Director, Scientific Research Management Department
China Institute of Sports Science

Engaged in scientific research and service work, Prof. Hong Ping worked for Chinese national teams during their preparation for Olympics for as long as 12 years. In 2001-2012, He was acting as the director of scientific supplement group in Chinese women basketball team; in 2002-2012 as the director of scientific supplement group in Chinese gymnastics team. Prof Hong also a member of a team of scientists appointed by General Administration of Sport in China in 2008 Beijing Olympics, 2010 Vancouver Winter Olympics and 2012 London Olympics.



He has undertaken research of many major projects at national level such as “A Study and Establishment of a Diagnosis and Test System of Chinese Elite Athletes’ Competing Ability”, “ A Study of Scientific Support and Directing System for Chinese National Teams in 2008 Olympics” and “ Theory and Methods of Physiological and Biochemical Monitor of Elite Athletes’ Training”. Prof Hong won the second prize of Reward of National Science and Technology Progress (a national award). In addition, He was awarded the “Prize for Outstanding Contributor in 2008 Beijing Olympics”.

Research on the Application of Training Monitoring on the Chinese Gymnastic Team

This research monitored the 2008 Olympic athletes of the Chinese gymnastic team for a long period from the aspects of sports training, medicine, biomechanics, psychology, physiology and biochemistry. A training monitoring system of the Chinese gymnastic team was set up, including:

- Physical function assessment.
- Monitoring on physiological and biochemical indexes.
- Monitoring on nutrition.
- Monitoring on physical fitness.
- Monitoring on special technique of gymnastics.
- Monitoring on mental state.

This training monitoring system improves the scientific research and technology services ability of the Chinese gymnastics team, ensuring the athletes who attend the systematic training are matched with wonderful physical fitness and performance. With the powerful technical support of this system, the Chinese gymnastic team won 7 gold medals on the 2008 Olympic game, which is a historic breakthrough.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Speaker: 12 July 2013 – 13:45

Mr Mervyn Foo
Technical Director
Singapore Bowling Federation

Mervyn Foo is an ex-national bowler who had represented Singapore in both regional and international tournaments from age 16. His medal and award accolades include Asian Youth Federation Internationale des Quilleurs, SEA Games, World Games, Singapore Sports Award, Straits Times Coca Cola Sports Award and more.

As a bowling coach, Mervyn together with his coaching staff was instrumental in the podium success of many individuals and teams locally and internationally.



During his term as the National Head Coach with the Singapore Bowling Federation (SBF) from 2006 to 2009, the national team celebrated many wins, such as leading the medal tally with 2 Gold Medals in the 2006 World Men Championship, First ever Gold Medal in the World Youth Championship in 2006, 5 Medals (1 Gold, 2 Silver, 2 Bronze) in the 2006 Asian Games, Singapore's first ever Qubica/AMF Bowling World Cup Champion in 2008.

He firmly believes in nurturing the youth in creating a clear thorough pathway. Patience and mental resilience is key to success – “No one is bigger than the programme”. As a result of his coaching achievements, Mervyn has been awarded the Singapore Sports Council Coach Recognition Award and Singapore Sports Awards - Special Mention for Coaching Achievement by the Singapore National Olympic Council.

He is currently the Technical Director with the SBF and drives programmes in national development including youth, national team development and the coaching certification.

Singapore Bowling in the 21st Century – The Singapore Bowling Federation Journey

The presentation will showcase SBF's strategy to develop local athletes and coaches and how they work with their stakeholders. It will also share on the barriers that SBF had encountered, how they had overcome it and how it will pave the future for its athletes and coaches.

Singapore Sports Institute Annual Symposium 2013

Integrating Sports Science & Medicine with Coaching in Competitive Sport

Plenary Session Chair – Integrating Sports Science & Medicine with Coaching in Competitive Sport (Part 2)

**Mr Tan Wearn Haw
Chief Executive Officer
Singapore Sailing Federation**

The first Singaporean to win the Optimist Asian Championships and multiple Asean titles, Mr Tan Wearn Haw subsequently progressed through the various youth classes to the Olympic 470 class, clinched several Asian titles during the Olympic campaign, as well as an assortment of Asian and SEA Games medals. Awarded a Public Service Commission Scholarship by the Singapore government to pursue his undergraduate studies in France and United Kingdom in 1997, Wearn Haw graduated from Imperial College, London with a Masters Degree in Aeronautical Engineering.

His diverse education and career background has provided him with opportunity of living in different Asian, European and Oceania countries over the past 12 years and has seen him involved in sports policy development with the Ministry of Community Development, Youth and Sports (MCYS), compete as a professional athlete with an America's Cup Challenger team as well as sports and education development with the Singapore Sports School.

In his previous appointment with MCYS prior to joining the Federation, Wearn Haw was working closely with various stakeholders in Singapore sport to materialise and manage several key projects such as Olympic Pathway Programme 2012, development of Singapore Sports Institute, sports development funding as well as elite and youth athlete management programmes. He was also elected to the Federation's first High Performance Sailing Committee in 2002 as the sailors' representative and is currently an elected Executive Committee member of Olympians Singapore.