Sports Science, Medicine and Technology News

Sports Science, Medicine and Technology News, prepared by AIS Performance Research is designed to improve communication and information dissemination within the Australian sport sector on developments and research in sports science, medicine and technology. Some of the links will require you to login to the Clearinghouse for Sport.

Research Programs

Sports Medicine Australia Research Foundation Grants

The following researchers were awarded 2011 Research Foundation Grants.

- Chris Bishop, University of South Australia
- Adam Culvenor, University of Melbourne
- Eric Martin, University of Notre Dame, WA
- Phillip Melville, University of Queensland
- Kate Pumpa, University of Canberra

Australian Research Council Approved Projects for 2012

Information on the following and previous ARC Research Grants related to sport, exercise and fitness can be located in the ARC area of the Clearinghouse for Sport.

- Molecular dissection of the functional regions of genes that encode actinins (ACTN2 and ACTN3) and their contribution to normal variation in skeletal muscle function - Prof. Kathryn North, University of Sydney
- Endogenous and environmental regulation of energy expenditure in skeletal muscle - Prof. Peter Choong et al., University of Melbourne
- Anticipation and decision making skill: from testing to training - Prof Andrew Williams et al., University of
Sydney Football Federation of Australia

- Exposure to alcohol advertising and sponsorship in Australian televised sport: association with explicit and implicit alcohol cognitions and drinking - Dr Kerry O'Brien, Monash University, Australian Drug Foundation and Victorian Department of Health
- Legal risk management of adverse health outcomes and injury in the fitness industry: developing evidence-informed regulation that improves safety - Prof. Keyzer et al., Bond University, Fitness Australia and Sports Medicine Australia

World Anti-Doping Agency Scientific Research Grants

Applications close 17 February 2012.

Research Awards

The I.T. Invention Test - CSIRO-Australian Institute of Sport Partnership Sports Technology Award

James Lee from Queensland Sports Technology Cluster, who developed a wearable technology for swimmers, took out the $5,000 prize in this award which was aimed at identifying sports technologies that can maximize elite athletes performance.

2011 ACT Sports Research Award Recipients

- Best New Investigator - Jeremy Witchalls, PhD student, Faculty of Health University of Canberra & Physical Therapies AIS - Performance characteristics which predict risk of injury in ankles: A systematic review with meta-analysis.
- Open Category - Vanessa McDermott, School of Sociology Australian National University - Conceptualising Legitimacy, Moral Panics and PEDs: Crisis? Whose Crisis?

AIS Conferences

During November and December, the AIS has been involved in hosting three significant Conferences/Seminars:

National Elite Sports Council Forum 2011, 9-10 November

Sports science and medicine related presentations were:

- Innovation and sport - Selling science to the generations: convincing boomers, persuading Y’s by Dr Scott Drawer - Head of Research & Innovation, UK Sport
- Technological innovations that win - the pathway from concepts to outcomes Prof Erol Harvey - CEO, MiniFAB (Aust) Pty Ltd
- Does Recovery help or hinder adaptation to training - recent performance and sleep evidence Dr Shona Halson - Head, AIS Performance Recovery and Dr Charli Sargent - UniSA Centre for Sleep Research
- Medical Innovation - Pain, performance and the trainable brain by Professor Lorimer Moseley - Clinical Neurosciences and Chair in Physiotherapy, University of South Australia

8th Australasian Biomechanics Conference, 28-29 November

This Conference was hosted by AIS Movement Science and there were over 120 delegates and several keynote sessions were filmed and will be made available.
through Videos area of the Clearinghouse. It was great to see Dr Mario Lafortune, a
AIS senior biomechanist from 1984-1989, return and provide an insight into the
development of sports shoes by Nike.

**AIS Recovery Symposium, 12-13 December**

This symposium was hosted by AIS Performance Recovery. There were
approximately 100 delegates.

Presentations for the above Conferences/Seminars are or will be available through
the Videos area of the Clearinghouse for Sport.

**SMART Talks**

During 2011 there were 42 SMART Talks - 19 from current and former AIS staff, 3 from ASC staff, 12 overseas researchers and 8 Australian researchers.

Recent presentations are:

- 8 Dec - AIS 30th Anniversary Reflection Series - Greg Blood
- 1 Dec - How is landing technique related to knee injuries in volleyball?” Ina Janssen, PhD Scholar, AIS and University of Wollongong
- 1 Dec - Improving the link between high performance sport and community health: Issues and opportunities for collaboration with China by Prof. Tony Parker, Queensland University of Technology
- 30 Nov - Mental Toughness Training for Coaches by Jason Patchell, AIS Performance Psychology
- 28 Nov - Report on United Kingdom High Performance Planning Visit by Peter Sharpe and Emery Holmik, AIS High Performance
- 21 Nov - AIS 30th Anniversary Reflection Series - Patrick Hunt
- 8 Nov - Exercise Science and Sport Science in the United States - Dr Mike Stone, Director of the Exercise and Sports Science Lab, East Tennessee State University
- 17 Nov - Strength and Conditioning at the AIS - Julian Jones, Head of AIS Strength and Conditioning
- 15 Nov - Methods and structure of service delivery by Bewegings platform, Belgium - Sven Marien, Bewegings platform, Belgium
- 14 Nov - Athlete Monitoring Software and on the Differences of Strength and Conditioning coaching from Australia to France - Tim Rogers, Stade Francais — CASG Rugby

**Occasional Lectures**

- Computational Fluid Dynamics for Coaches and Scientists - Paul Cleary and Raymond Cohen, CSIRO
- Cardiac screening in athletic populations by Dr Maria Brosnan

Videos and Powerpoints for all the above presentations can be viewed through the Videos area of the Clearinghouse for Sport.

**Spotlight on AIS Recovery Research**

[Interview with Dr Shona Halson](#)

In a recent interview, Dr Shona Halson outlined the development of performance recovery at the AIS and current research directions. Performance recovery is now an essential component in the athlete's competition and training regime. There will be a Recovery Centre established for Australian athletes attending the London Olympic and Paralympic Games.

AIS Performance Recovery have produced over 60 papers/presentations and these can be located in the [AIS Sports Science and Medicine Publications Database](#), a subset of the National Sport Information Centre (NSIC) Catalogue.
AIS Published Research

Research Articles

The following articles have been added to the AIS Sports Science and Medicine Publications Database. During 2011, there were 50 peer-reviewed articles added to the Database.

- **Validity and reliability of agility tests in junior Australian footballers.** Young, W., Farrow, D., Pyne, D., McGregor, W., Handke, T. Journal of strength and conditioning research 25 12 Dec 2011 3399-3403
- **Enhancing cricket batting skill : implications for biomechanics and skill acquisition research and practice.** Portus, M., Farrow, D. Sports biomechanics (Edinburgh) 10 4 2011 294-305
- **Hitting a cricket ball : what components of the interceptive action are most linked to expertise?** Weissensteiner, J., Abernethy, B., Farrow, D. Sports biomechanics (Edinburgh) 10 4 2011 324-338

If you encounter problems in downloading the articles request a copy from the NSIC.

Research Reports

The following AIS Performance Research report is now available through the Clearinghouse for Sport.


Sport Science and Medicine in the News

- **Animal house to Altitude House.** Ben St Lawrence has lived in "altitude house" at the Australian Institute of Sport in Canberra with training partners Collis Birmingham and steeplechaser Youcef Abdi
- **Secret weapon putting Proteas in rarefied air.** - The hyperbaric chamber theoretically enriches the oxygen supply to the body and can provide almost instant recovery

Partner News
University of the Sunshine Coast

Swimming Australia and the University of the Sunshine Coast have established a High Performance Paralympic research area in swimming. The two priority research themes are: performance analysis/biomechanics and exercise physiology.

The project works directly with an elite group of international swimmers, coaches and sport scientists. [PhD Scholarship Program](#) has been established.

CSIRO

CSIRO Advancing Human Performance team tracked the new Green Edge road cycling team during their recent training camp at the AIS and Thredbo and improved live tracking technology as they trained. Rides were tracked in Canberra and Thredbo. Live tracking technology can provide detailed information to a race audience and if a whole field is tracked, offers the potential for live web telecasts of races. Tracking during training provides feedback to coaches to enable them to analyse performance while training is taking place. Using an amalgam of technologies including Google My Tracks, Map My Tracks, our own CSIRO Android app and wireless sensors we can provide cyclist position, speed, heart rate, power and cadence.

The work with green edge forms part of a project to establish a ‘Knowledge Experience Network’ for sport that connects athletes, coaches and sports scientists so as to enable live information sharing and communication for performance development. The goal of the project is to develop a system that addresses a number of problems with current practices, including:

- The athlete and coach and scientist are often physically separated making both measurement and communication difficult.
- Data is logged by isolated devices leading to lengthy delays between acquisition, analysis and feedback.
- It is difficult for specialist staff to personally always attend training sessions and access and comment on immediate and historical data.