On behalf of those who work in the Department of Physical Education and Sport Sciences (PESS), I am delighted to welcome you to the first edition of the online magazine *The Physical Education and Sport Sciences E-Zine*. The magazine will feature articles on current research in the PESS department, community/translational work that PESS staff/postgraduates are involved in and a news section to celebrate achievements of PESS staff and students.

The PESS department is a vibrant and rapidly growing department in the Faculty of Education and Health Sciences. The PESS department's mission is to promote and advance learning and knowledge in the area of physical education and sport sciences through innovative teaching and research. The department supports a thriving research postgraduate community and is recognized for excellence in research in Physical Education, Physical Activity, Health, Sport and Exercise Sciences and related fields. It has a strong emphasis on translating research into action and thereby continually striving to positively impact society through research and innovation.

PESS offers undergraduate programmes in Physical Education and Sport and Exercise Sciences, a Graduate Diploma and Masters qualification in Dance, a taught Professional Diploma in Education (Physical Education), a taught MSc in Sport Performance and an Erasmus Mundus Master in Adapted Physical Activity. Through the National Council for Exercise and Fitness (NCEF), the PESS department delivers a Certificate and Diploma in Exercise and Health Fitness. PESS also supports the structured doctoral opportunities available within the Faculty of Education and Health Sciences. Details on all programmes and further information on PESS can be accessed at [www.ul.ie/pess](http://www.ul.ie/pess).

We are delighted to announce that the refurbished Physical Education and Sport Sciences building will be officially opened by Minister Jimmy Deenihan on Friday 8th March 2013. The final programme of events for the day will be advertised as soon as is possible on the PESS web site ([http://www.ul.ie/pess](http://www.ul.ie/pess)) and PESS facebook page and will include tours around the labs and practical spaces in the building, presentations on the teaching and research that is undertaken in the building and talks from a range of people involved in sport and physical education.

I would like to thank the Editors, Rhoda and Ian, for their investment and time in pursuing the idea of a magazine and in bringing it to fruition. It is a welcome addition in our quest to not only keep UL faculty and students informed of the work of PESS but also as a means to communicate with the general public outside of PESS, alumni and future students.

Regards.

Dr. Ann MacPhail
Head of Physical Education & Sport Sciences Department

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**Note from the Editors**

Welcome to the first edition of the *PESS e-Zine*. This issue looks back at the diversity of the research, activities, and events within the Physical Education and Sport Sciences (PESS) Department in 2012.

Many thanks to all our contributors to this first issue. The 2012 issue provides an update on a number of research studies, including the thriving UL Body Composition Study and the on-going work in the National Altitude Training Centre. Exercise Physiologists give us an insight into cryotherapy and our resident Psychology faculty explore the area of Motor Cognition. Outreach activities are a key part of our department’s work, and I-Play, Disabled Golf and Amputee Biomechanics feature in the issue. The PESS department prides itself on the high standard and talent of its postgraduate students, and Laura-Anne Furlong and Lynne Algar explain how their personal involvement in sport and coaching contributes to answering research questions in sport. Chris Bryan, (Irish international Open Water Swimmer) describes what is like to be an international athlete and a student in the PESS Department. Dr. PJ Smyth’s contributions to the department and sport are celebrated in an extensive feature. The e-Zine also highlights staff and student achievements and notable events coming up in 2013.

We hope you enjoy this first edition.

Rhoda Sohun and Ian Kenny

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The PESS E-Zine is published by the Physical Education and Sport Sciences Department. We would be delighted to receive your comments and ideas for future editions.

The opinions and views in the publication are those of the contributors and not necessarily of the PESS Department. While every care is taken to ensure accuracy in the completion of this E-Zine, the PESS department cannot accept responsibility for any errors or omissions or effects arising thereof. However, such errors may be brought to the attention of the Editors. All material is copyright.
Research
6 UL Body Composition Study
Clodagh Toomey (PhD Student)

8 Motor Cognition Revealed
Dr. Tadhgh MacIntyre

10 Whole Body Cryotherapy and Post-Exercise Recovery
Dr. Joseph Costelloe

16 UL Researchers Collaborate on International Project Involving Disabled Golfers
Dr. Ian Kenny & Dr. Mark Campbell

24 Living the High Life-National Altitude Training Centre
Rachel Turner

Outreach Activities
19 Out On A Limb - Amputee Biomechanics
Dr. Ian Kenny

22 I-Play
Dr. Daniel Tindall

Features
4 PESS Building Transformation

12 Dr. PJ Smyth - ‘A Man Ahead of His Time’
Rhoda Sohun

26 PESS Students in Sports - Chris Bryan
International Marathon Swimmer

28 A Multidisciplinary Approach to Sport Science
Lynne Algar - PESS PhD Student

30 Irish Hockey
Laura-Anne Furlong - PESS PhD Student

News
2 Head of Department Welcome
Dr. Ann MacPhail

4 Recent Renovations of the PESS Building

18 Physical Activity, Health, Lifestyle and Sport Institute

32 PESS PhD Research Scholarship Awards

32 PESS Students Honoured at the 2012 the President Volunteer Awards

33 PESS Graduations 2012

33 PESS PhD Graduate Appointments in 2012

34 PESS Staff and Student Achievements

35 Publications
In March 2011 the eagerly awaited rebuilding of the central section of the Physical Education and Sport Sciences building was approved by the University. From July 2011, work commenced on the demolition of the central section of the building and a positive sense of expectation was apparent throughout the department. The PESS building has been described “as an early 1970’s vintage, remarkable and unique in its design” and as the demolition progressed the remarkable features of the building presented unique challenges to the builders and the staff and students inhabiting the building.

Despite the considerable discomfort of having to operate adjacent to a building site for more than a year, all those involved worked with great tolerance and understanding because we knew that in the end the outcome would be a much improved working environment for all.
In the end the project was completed well ahead of schedule and we were able to enjoy access through the new entrance in April 2012.

The development now provides an excellent 130 seat Lecture theatre, 30 seat tutorial room, 8 new staff rooms, 4 new laboratories, a multi-purpose practical teaching area, staff and student changing rooms, a 35 seat computer suite, student study area and a pleasant Café at the main entrance. In addition other works to the main administration corridor and staff rooms have helped to upgrade the remaining older parts of the building. The building will be formally opened by Minister Jimmy Deenihan on March 8th 2013.
The University of Limerick Body Composition (ULBC) Study (www.ul.ie/bodycompositionstudy) was established in 2008 to examine body composition in a representative sample of the Irish population. Based in the Department of Physical Education and Sport Sciences (PESS), this study is the first large scale investigation into body composition and its measurement in an Irish context. Under the guidance of Prof. Phil Jakeman, various staff, postgraduate and undergraduate students from both PESS and Physiotherapy Departments in the university have contributed to data collection, analysis and dissemination over the past four years.

**THE BODY COMPOSITION (DXA) LABORATORY**

The body composition laboratory houses a dual-energy x-ray absorptiometry (DXA) scanner, which is considered to be the gold standard tool for measuring body composition. It allows accurate analysis of lean, fat and bone tissue mass at each body segment. Site-specific scans of the lower spine and hips are carried out to evaluate bone mineral density (BMD) in the identification of osteopenia and osteoporosis. Surrogate measures of body composition including bioelectrical impedance, skinfolds and ultrasound are also employed as part of the on-going research. Since October 2008 data has been collected from over 2000 volunteers ranging in age from 18-81 years. ULBC has worked with sporting organisations such as Munster Rugby, Tipperary and Clare Senior Hurling, UL High Performance Centre Swimming and Paralympics Ireland in providing athletes, coaches and sports nutritionists with the most advanced body composition analysis. It has also facilitated research projects such as the Food for Health Ireland (FHI) Healthy Ageing Study, the Kellogg’s Study and final year projects.

**INITIAL FINDINGS**

Research output to date has included several publications in the area of body composition measurement such as bioelectrical impedance, ultrasound and anthropometry, the most recent being an update on the 1974 Durnin & Womersley skinfold algorithms to predict body percentage fat based on the sum of four skinfold thickness measures (Leahy et al 2012 - British Journal of Nutrition). This publication offers an improved estimate of body fat in adults using anthropometric measurement of 3 sites in men and 4 sites in women, constructed and validated from 1136 adults aged 18-72 years. These updated algorithms are particularly relevant given the change in phenotype due to the rise in obesity over the past three decades and are expected to replace the commonly used equations of Durnin & Womersley (1974) and Jackson & Pollock (1978).

ULBC has determined the average body percentage fat throughout the age ranges to be 21% (5-42%) in men and 33% (12-57%) in women. Body mass index (BMI), the metric used to classify persons as obese, has not been shown to correlate strongly with body fat or show sensitivity to change. It can therefore misclassify certain individuals in terms of health risk associated with excess fat. Thus, a body fat mass index (BFMI) has been developed which uses ‘fat mass’ rather than ‘body mass’ to define ‘normal’, ‘over fat and ‘fat obesity’ ranges that should better predict risk of health disorders and age-related change associated with adiposity.

By 2041, there will be 1.4 million aged 65 and over (22% of the population). Present research is targeted towards the ageing population, with a focus on the progressive loss of lean tissue mass (Sarcopenia) and bone mineral density (Osteoporosis). In conjunction with the Healthy Ageing Study, the goal is to investigate the prevalence of these disease states in our convenience sample of older adults and to endeavour to offset this decline through nutritional and exercise interventions. It is anticipated this research will inform best evidence-based practice in the management of healthy ageing.
Since the launch of ULBC study four years ago, there has been valuable progress in terms of establishing age and gender specific reference ranges for whole-body and segmental body composition. As the databank continues to grow, the study has recently upgraded DXA measurement capabilities to include visceral fat as a composition measure (GE CoreScan™). Visceral, or intra-abdominal, fat is located inside the abdominal cavity surrounding organs such as the stomach, kidneys and liver. Compared to subcutaneous fat located under the skin, it is strongly linked to cardiovascular disease, type II diabetes, insulin resistance, inflammatory diseases and other obesity-related metabolic abnormalities. It is anticipated that future research will focus on prevalence of ‘visceral obesity’ amongst age groups and its association with health outcomes. This will serve to enhance the growing knowledge base on health- and performance-related body composition parameters for the Irish population.

**PUBLICATIONS**


**FUTURE RESEARCH**

Clodagh Toomey graduated from UL with a BSc. Physiotherapy in August 2010 and commenced postgraduate research in the Department of Physical Education and Sport Sciences.

Clodagh is supervised by Karen McCreesh (Dept. of Physiotherapy) and Prof. Phil Jakeman (Department of Physical Education and Sport Sciences). Clodagh’s PhD is funded by Food for Health Ireland (FFHI).
A 2,900 Mile Round Trip to a New Destination for Psychology: Motor Cognition Revealed

Dr. Tadhg MacIntyre, PESS Department
Dr. Mark Campbell, PESS Department
Dr. PJ Smyth, PESS Department

How Far Have We Travelled?

Over a Century ago William James, who’s family hailed from Cavan, wrote that one could learn to skate in Summer and swim in Winter, through our mind’s eye. One of the founding fathers of psychology and initiator of the first psychology laboratory at Harvard, William James was prescient in the questions he posed on the relationship between imagination and action. Interestingly, the department of psychology at Harvard is housed in a fifteen storey office block appropriately named William James Hall. Furthermore, for several decades the eighth floor of this building was home to the laboratory of Stephen Kosslyn, one of the foremost cognitive neuroscience researchers on the topic of mental imagery. His research on the nature, mechanisms and theory underlying mental imagery, combined with the efforts of Marc Jeannerod have led to the emergence of a new discipline, the field of motor cognition. As a result, one hundred and twenty years since William James first postulated an ideomotor theory of action, this topic has spawned interest among researchers in PESS, at UL, almost 3,000 miles from James’ Boston laboratory, and only 100 miles from the original James family homestead.

What is This New Discipline?

Motor cognition is the multidisciplinary field of research that is concerned with understanding action. Specifically, motor cognition is a mental process in which the motor system draws on stored information to plan and produce our own actions, as well as to anticipate, predict and interpret actions of others. It seeks to understand areas such as imitation, imagery, and the representation of action, typically applying the converging methods of cognitive neuroscience (see Kosslyn & Moulton, 2009 for a nice example). Neuroscientific evidence suggests that parts of an agent’s motor system are active when he or she plans and/or imagines an action. And moreover research also shows that some areas of an observer’s motor and premotor systems are active when he or she perceives actions performed by another person (i.e., partially explained by specific neurons termed “mirror-neurons”). In essence, imagined and executed actions rely on similar motor representations and activate some common brain areas, what is known as the functional-equivalence hypothesis. Thus the difference between an imagined movement and an executed movement is one of degree not of kind, so that covert and overt aspects of an action are parts of a single representation execution continuum.

Why Was There an Elephant in the Room?

The historic omission of psychological factors in studying human movement could be described by the elephant in the room analogy. To explain, psychology had ignored study of movement but focused instead on mental processes, leaving this question the preserve of researchers in motor control, biomechanics and physiology. Motor control applied a primarily descriptive approach, which was concerned with outlining the neural, physical and behavioural aspects of movements. Only when both a theory (e.g., functional equivalence) and a methodology (e.g., converging methods of neuroscience) had emerged to explore action did it return as a topic of study within psychology.
One early limitation of the field of motor cognition was that the tasks studied were often artificial and typically laboratory based, thus, lacking in ecological validity. The term *sport* for instance, did not feature in either texts of *motor cognition*. The emergence of the expertise paradigm based on the work of Anders Ericsson and the increasing consensus that sport could provide a *natural laboratory* for the study of action (i.e., with subjects stratified on the basis of expertise), has augmented the traditional approach of neuroscience with a strength-based approach.

**New Directions for Research on Imagery and Action Observation**

At least four new directions may be identified for future research on imagery and action observation processes. First, little is known as yet about athletes’ *meta-imagery* processes – or their beliefs about the nature and regulation of their own imagery skills. This scientific neglect of what athletes know about their own imagery processes is surprising in view of the abundance of anecdotal insights into imagery that are available from sports performers.

Secondly, research is needed to investigate the use of chronometric methods to validate athletes’ reports of their imagery experiences. If imagined and executed actions rely on similar motor representations and activate certain common brain areas, the temporal organization of imagined and actual actions should be similar – leading to a close correspondence between the time required to *mentally* perform a given action and that required for its *actual* execution. Third, research is required on the relationship between action observation, motor imagery and action execution. In this regard, a potentially promising line of inquiry concerns the study of eye movements. Such movements not only provide objective tools for studying online cognitive processing in imagery and action observation but could also be used to draw inferences about the shared neural network system that underlies these activities.

Finally, an exciting and potentially fruitful new direction concerns the development of methodologies for the investigation of the unique neural mechanisms underlying motor imagery, motor execution, and action observation among experts in human movement (e.g., athletes). The use of transcranial magnetic stimulation and fMRI can help elucidate the *distinctive* and overlapping neural mechanisms underlying motor imagery, motor execution and action observation processes.

**In the Footsteps of Giants**

Despite over a Century of musing on the role of cognition in action, only in the past two decades have the methodologies emerged to accurately explore these issues. This is due to advances in the methods of cognitive neuroscience (e.g., fMRI), the adoption of the expertise paradigm and the increasing recognition that sport is a domain worthy of study.

Taken together, these advances can enable the field of motor cognition to more comprehensively tackle the questions on the role of thought in action preparation, simulation and execution, posed by William James more than a century ago.

**6 Links WorthLooking Up**


Whole body cryotherapy (WBC) is a cooling treatment that has recently gained widespread popularity amongst athletes, with a range of claims being made regarding its efficacy, particularly in aiding recovery from training. WBC involves repeatedly exposing an individual, dressed in minimal clothing, to extremely cold air (–100 to –130°C) for 2 to 4 minutes. During WBC, the individual experiences temperatures that are between 30–50°C colder than the lowest temperature ever recorded in Antarctica. Consequently, WBC is causing much debate amongst physiologists, physiotherapists, clinicians and sports people alike regarding its effectiveness and potential risks.

This debate has intensified with the news that current 100 and 200 m Olympic Champion Usain Bolt used the treatment before London 2012. Though the skin is exposed to extreme cold during WBC (many WBC participants just wear shorts), the relatively low thermal conductivity of air, lack of air movement and the short duration of exposure normally reduce the risk of cold injury. Most operators also ensure that the participants wear gloves and facemasks.

WBC chambers were introduced from Japan to Europe in 1982 and the use of this treatment continues to rise despite the paucity of published literature in the area.

Is -110°C Whole Body Cryotherapy effective in improving post-exercise recovery in sports people?

Joseph T. Costello, Institute of Health and Biomedical Innovation
Queensland University of Technology, Australia

Alan E. Donnelly, Centre for Physical Activity and Health Research
University of Limerick

INTRODUCTION

Whole body cryotherapy (WBC) is a cooling treatment that has recently gained widespread popularity amongst athletes, with a range of claims being made regarding its efficacy, particularly in aiding recovery from training. WBC involves repeatedly exposing an individual, dressed in minimal clothing, to extremely cold air (–100 to –130°C) for 2 to 4 minutes. During WBC, the individual experiences temperatures that are between 30–50°C colder than the lowest temperature ever recorded in Antarctica. Consequently, WBC is causing much debate amongst physiologists, physiotherapists, clinicians and sports people alike regarding its effectiveness and potential risks.

INTERNATIONAL DEBATE

This debate has intensified with the news that current 100 and 200 m Olympic Champion Usain Bolt used the treatment before London 2012. Though the skin is exposed to extreme cold during WBC (many WBC participants just wear shorts), the relatively low thermal conductivity of air, lack of air movement and the short duration of exposure normally reduce the risk of cold injury. Most operators also ensure that the participants wear gloves and facemasks.

WBC chambers were introduced from Japan to Europe in 1982 and the use of this treatment continues to rise despite the paucity of published literature in the area.

STUDY HYPOTHESIS

The hypothesis of the current study was that WBC would be no more effective on muscle soreness recovery following eccentric exercise than a sham treatment. To address this hypothesis, we conducted a randomised controlled laboratory study in a two-group design (control and treatment). Despite the growing use of WBC, this was the first study of its kind to assess the effects of WBC treatment on recovery from muscle-damaging exercise.

METHOD

A group of 18 healthy and active participants with a mean age of 21.2 ± 2.1 years, who were blinded to the hypothesis of the study, performed an eccentric exercise bout consisting of 100 high-force maximal eccentric contractions of the left knee extensors on an isokinetic dynamometer (a device that measures muscle strength). These 18 volunteers were randomly assigned to either a WBC group (7 males and 2 females) or a control group (7 males and 2 females). Twenty-four hours later the participants received two bouts of either WBC or the control treatment after a lapse of 2 hours. The WBC treatment consisted of the subjects standing in a pre-cooling room at –60 ± 3°C for 20 seconds before entering and walking slowly around a second room at –110 ± 3°C for 3 minutes.

In the control group, the subjects followed the same procedure as the WBC except both chambers were set at a temperature of 15 ± 3°C. Maximal voluntary isometric contraction force (MVIC) of the left knee extensors and subjects subjective assessment of muscle soreness was measured immediately before and after the exercise bout and at 48, 72 and 96 hours following eccentric exercise.
MVIC (which was reduced by 40%) and the subjects’ subjective assessment of muscle soreness were both significantly affected in both groups, compared to baseline, following the eccentric exercise. Although no biopsies were collected in this study, the force loss recorded is indicative of underlying muscle damage. These outcome measures did not return to baseline for at least 96 hours following the exercise bout, and there were no differences between the WBC and the control group at any time-point during recovery.

The results of this study suggest that two bouts of WBC were ineffective in improving recovery from eccentric exercise when administered 24 hours after eccentric exercise. However, it should be noted that recent studies suggest that WBC might have an anti-inflammatory effect.

In summary, WBC is rapidly gaining popularity amongst athletes and sports people. To date there has been no convincing, unequivocal support for the therapy’s effectiveness in improving muscle functional recovery published in the peer-reviewed literature. Despite this, individuals continue to use WBC protocols that lack rigorous physiological assessment, and may perhaps be of limited value.

More information on this study can be found in the following journal articles:


A longitudinal examination of how athletes prepare, cope and reflect upon development

Lynne Algar, PESS Department, UL
Dr. Áine MacNamara, Institute of Coaching & Performance, University of Central Lancashire.

Athletic challenges, whether expected or not, have the potential to be a crisis, or a beneficial experience depending on the individual’s perception, preparation and support (Sinclair & Orlick, 1993). To continue to develop and perform well, athletes and especially developing athletes without much experience should be educated to identify, manage, and learn from competitive and organisational challenges, as well as recognise and use the social resources available to them (Kristiansen & Roberts, 2010).

This study used a longitudinal approach to capture the seasonal demands of a purposefully sampled group of development (n=3) and high performance (n=3) swimmers. To triangulate the data the athlete’s coaches (n=2) were also recruited. The aim of this study was to examine how these athletes prepared, coped and reflected upon varying challenges. Five stages of semi-structured interviews were conducted between September and August of the following year.

Patton’s (1990) method of qualitative analysis was practised using ATLAS TI (version 5.0.66) to inductively dissect the interview transcripts filtering raw data codes into meaningful themes and categories.

The findings show that a lack of strategic performance planning and ambiguity of the overall performance objective were identified as major sources of organisational stress for both athletes and coaches. A poor communication network and a reluctance to create a shared development approach between clubs and the HPC contributed to this stress. Injury and illness posed the greatest unexpected disruption to the athlete's progress. However, athletes that were injured appeared to cope better by maintaining a clear relationship with their coaches, revising their performance plan, and resetting realistic goals. These participants also showed better use of the support resources accessible in their environment suggesting that athletes cope more during times of disorder as opposed to pre emptying the challenge.

Joe Costello graduated from UL with a B.Sc. in Physical Education and Maths in 2008. In 2012 he received a PhD from UL in Thermal/Exercise Physiology under the supervision of Prof. Alan Donnelly (PESS, UL). Joe is currently a Postdoctoral Research Fellow at the Institute of Health and Biomedical Innovation in QUT, Brisbane, Australia. He is the project manager on the HERO (Heat Exposure Risk Management for Operational Command) project. This project is examining tolerance limits and guidelines for individuals wearing bomb and chemical, biological, radiological and nuclear protective equipment.
PJ Smyth has been a lecturer on the Physical Education programme of the National College of Physical Education (NCPE), Thomond College of Education (TCE) and University of Limerick (UL) since 1974 and on the Sport and Exercise Sciences programme in UL since it was established in 1993. Although recently retired, he remains a valuable member of the Physical Education and Sport Sciences department. PJ Smyth is not only known for his research in Motor Behaviour and Applied Sport Psychology, he is also well respected for his knowledge, expertise, and innovative coaching and training methods in rugby and athletics. He has been described to me as ‘a leader, innovator, guide, mentor and true professional’. PJ is a member of the panel of sport psychologists of the Irish Institute of Sport (IIS) and is an advisor on mental preparation and skill development to a number of performers.

I first met PJ Smyth nearly 20 years ago, when I came to the University of Limerick as a student of the BSc. Sport and Exercise Sciences programme in 1994. Although I have my own stories that reveal PJ’s commitment and passion for imparting knowledge, his sensitivity towards students’ abilities, and his rather unique love of bananas and bagels, I thought it more appropriate to contact some of the graduates who were students of the NCPE and TCE to ask them for their memories of PJ.

I have learned that PJ Smyth has always been committed to the education and development of his students, that he was ahead of his time in relation to physical conditioning and training methodologies, and you will struggle to find a person who is as generous with his time as he is.

**A Little History**

PJ Smyth is the eldest of five and grew up in Dun Laoghaire. He attended Christian Brothers College (CBC), Monkstown for primary and secondary school. The CBC was advanced in that it had exceptional facilities and exposed its pupils to a variety of subject areas. Pupils were fortunate to be introduced to activities such as pole vaulting, strength training and cross-country, among others. Rugby was Smyth’s passion from an early age and he was Captain of the Junior and Senior Rugby teams at school, playing several positions, but mainly centre and flanker.

He was a member of the school’s athletic club and later Crusaders Athletic Club. As a boy, Smyth was fascinated with training, fitness and skill acquisition and he applied the principles of fitness and training to himself. He watched role models training and performing skills and practiced such skills in a planned and thoughtful approach, thereby initiating his longstanding interest in motor skills and skill acquisition.

Smyth received a BA (1968) followed by a HDipEd (1969) both from UCD. At that time physical education training for men was not available in Ireland, and so Smyth went to St. Mary’s College, Strawberry Hill, London where he received a Diploma Physical Education in 1970. In his Strawbery Hill days, Smyth was renowned for his knowledge in relation to strength training. He was the person you went to if you needed advice on strength training and if you trained with PJ, you trained hard. He trained 7 days a week and at that time played front row for the Senior Rugby Team. In 1973, after teaching PE and general subjects for three years at is old school in Monkstown, PJ went to Springfield College, Massachusetts on a Fulbright scholarship. There he obtained an MEd in physical education.

**National College of Physical Education**

In 1965, Captain Michael McDonough (former Director of the Army School of Physical Training) was appointed as Inspector of Physical Education by the Department of Education. In 1969 McDonough prepared a report outlining the feasibility of setting up a National College of Physical Education (NCPE) which would offer the award of a B.Ed degree. The NCPE Limerick opened in January 1973 and Smyth began his career at the NCPE the following year. Some of Smyth’s work colleagues in the early ears of NCPE included Paul Robinson, Anne Sweeney, Teresa Leahy, Joanne Moles and Carmel Vekins and the equally memorable, Mr. Dave Weldrick. Smyth had first met Dave Weldrick at Strawberry Hill, while they were both on different physical education training courses. They shared an office for a number of years and remained colleagues until Weldrick’s retirement in 2009. Weldrick recalled the early days of the NCPE and the ‘stormy and emotional times’ that ensued when there was uncertainty as to how physical education teacher education would be viewed in academic circles. In those uncertain times, Weldrick remembers PJ’s tranquil nature and remarked that he was a ‘pillar of steadfastness’ with an ability to boost morale of many staff members. The college was renamed to Thomond College of Education in 1975 when subjects other than physical education were added. From 1984-87 PJ took a three year leave of absence to go the University of Southern California (USC) where he studied motor learning and sport.
He has held the position of Course Director for the SES undergraduate degree programme for 11 years on and off. He was the department’s Cooperative Education coordinator from 1993-2011 and has worked tirelessly in promoting both undergraduate programmes and the newer postgraduate programmes as they came on stream. He continues to take a special interest in tracking Sport and Exercise Science graduate appointments and has maintained contacts with a large number of students.

“Over years PJ built up a great wealth and experience of coop opportunities and always took time to follow up with the placement providers and thereby build the range and quality of opportunities for future students.”

“PJ followed the career trajectories of literally hundreds of graduating students and built up a register of career options and pathways for our BSc Sport and Exercise Science graduates. No one knows more about our graduates’ careers than PJ and he continues to be a contact for our graduates many years after they completed their degrees.”

Drew Harrison, Head of PESS Department 2006-2013

In the nearly two decades that I have been part of the PESS department I have not encountered any other staff member who is as dedicated and passionate at promoting the PE and SES programme and who is driven to keep track of past graduates. PJ Smyth can be regularly heard listing off where past graduates have taken up employment. He remembers students; not just their names, he truly remembers them.

“PJ has been the inspirational lecturer and long term friend to generations of students. After many years at UL, his enthusiasm is unabated, and he remains the students favourite, for his kindness, his ability to listen to and encourage, and most of all for his passionate belief in the value of Physical Education and Sport and Exercise Sciences.

He is universally loved and respected, and through his teaching and quiet encouragement of generations of physical education teachers and sport and exercise scientists he has made a major contribution to his profession, to the University of Limerick, and to Ireland.”

Alan Donnelly, Head of PESS Department 1999-2006

The Educator

From the early days of the NCPE up to recently, PJ Smyth taught on a variety of modules in the department including, rugby, athletics, physical conditioning, badminton, motor learning and applied sport psychology. Eddie O’Sullivan (graduate of the TCE (1979) and Irish National Rugby Coach, 2001-2008) describes Smyth’s ‘extra effort’ to ensure that students understood the content he was teaching. “His own passion for the subject matter automatically rubbed of his students. PJ prepared meticulously for lectures, constantly introducing the latest research in his field.” I can also testify to PJ’s attention to detail, as I have not forgotten his A4 handouts, which had a large number of additional slides, studies and other materials painstakingly reduced in size and arranged and photocopied all on one A4 sheet.

“Thank you PJ for what you have given to the generations of Irish PE teachers and their students...while still quietly preparing for the next lecture”

John Sheehan, Graduate

Tony Ward (rugby fly-half for Munster, Leinster, Ireland, the British and Irish Lions and the Barbarians in the 1980s) started in the NCPE on the same day that Smyth started his teaching career in the college in 1974. He recalls that the lectures on psychological aspects of physical education were the most eagerly anticipated and best attended lectures of their college week.

Dave Mahedy (former student of NCPE and Director, Sport and Recreation at UL) described the dinner table debates on physical education and sport that he and fellow students and Smyth had when they were tenants in Mick Sherry’s house. Ward says they constantly beseeched Smyth for hints on upcoming exams, but Smyth never yielded and maintained professionalism at all times, much to his housemates disappointment.

“For nine months we pleaded with him for just a snippet of information, a small hint ahead of exams. Needless to say we got nothing. Mr. Perfect Lecturer milked the high moral ground for all it was worth!!!”

Tony Ward, Graduate

John Sheehan, graduate of TCE and currently Physical Education teacher in St. Clements College nostalgically reminisced ‘amazing memories of PJ Smyth’ whom he first met in 1976. Within weeks of starting in the NCPE, Smyth “transformed a group of 17 young men into a pretty decent rugby team”. John recalls that this transformation of a group of young men into a team confirmed his desire to become a physical educator.

Dave Weldrick revealed that in the early years he learned from watching PJ teach and seeing how the students learned from him. He described Smyth’s persuasive approach and how he used his knowledge to motivate students. Pat Duffy (TCE graduate and Professor of Sport Coaching, Leeds Metropolitan University) describes PJ as the ‘informed and empathetic guide. You knew he knew, but he would always make you think. By building positive, professional relationships with students, he gained their respect – and then proceeded to inform and influence their thinking and practice in both firm and subtle ways’.

“He introduced us to a totally new world of Physical Education and Sport. Up to that time, we just played a game. PJ showed us how to think about sport, how to prepare to play and above all how to improve both our own skills but the skills of others. It was a pioneering time in Irish Sport and PJ was there, leading the charge”

Dave Mahedy, Graduate

At around 19, his friend, Phil Conway (Irish Athletics Olympian, 1972; National hammer and discus coach) introduced PJ to Michael Colleary’s gym in Dublin. Michael Colleary, was incredibly knowledgeable in relation to the theoretical and practical aspects of resistance training. It was at this gym that Smyth transformed his physical shape to a front row prop.

Louis Magee (Chairman of the IRFU, Performance Committee) was introduced to Smyth in his early 20’s when he and Smyth were playing with Bective Rangers and continues to regard him highly. He described how Smyth introduced the club to scientific training methods and taught the players how to improve skill. Training sessions were structured and all aspects were well thought out. Weight training and diet were attended to and Magee said it was not surprising that after that first season, Smyth went on to captain the team for two years. Smyth laid the foundation for successful teams to follow. Magee is without doubt that all players benefited from Smyths expertise.

Smyth’s coaching methods were both meticulous and innovative. Eddie O’Sullivan summarised Smyth’s techniques “He had the capacity to break down fitness training and skills into their constituent parts and using the latest available research in the field, developed innovative methods to maximise the potential of players. Training sessions were always brutally hard, but you felt you were getting the maximum return for your efforts. Coaching sessions were always interesting and constantly challenged you to improve your skill levels through innovative mini games and drills”.

Tony Ward says he will never forget the cross field sprints from touchline to touchline behind the posts of Maguire’s Rugby pitch) where physical and mental commitment were expected and where light-heartedness were treated with disdain. Dave Mahedy, says that Smyth was the first person to introduce students in NCPE to interval training. Mahedy said it didn’t take long for a following of top class players to tag on to him for sessions, including Mahedy himself, rugby players such as Tony Ward, Eddie O’Sullivan, Pat Whelan, and Mick Sherry, and GAA stars such as Oggie Moran and even the late Paudí O’Shea all taking part in interval sessions 2-3 times a week. Mahedy says "it was like a private High Performance group ahead of its time and before the term High Performance was even invented".

In the 1980’s Garryowen Rugby Club was at the pinnacle of Irish Club Rugby. As joint coach with Pat Whelan, Smyth coached the Garryowen back-line to two Munster Senior League titles and was an extremely innovative coach in his time, constantly challenging players to become more skilful. During that time Garryowen became known for their innovative back play and willingness to run with the ball, which was atypical of Munster club sides at that time.

Seamus Byrne, (Club President of Garryowen Rugby Club in the 1980’s) recalled a vivid memory of PJ in 1983, when the team was on route to play Bangor Rugby Club (one of the best rugby teams in Ireland at the time). Byrne described a ‘dossier’ that PJ produced on the 15 man squad. “It was a complete analysis of every player. PJ had the ability to assess players’ technical skills and personalities and determine how these would affect performance on the field”. Byrne said he had never seen anything like this level of player analysis before. In Byrne’s opinion, PJ Smyth expanded the role of the coach. Smyth prepared a psychological strategy for the season and for each individual game. Goal-setting and mental rehearsal became part of the game. Pat Duffy reinforces Byrne’s observations and says that Smyth was revolutionary with his coaching methods. “He was way ahead of his time in advocating a decision-making approach to the development of skills and also in the importance of strength and conditioning”.

PJ Smyth was been heavily involved in rugby coach education courses and player development programmes in the pre-professional days. He was a member of IRFU and Munster Branch coaching committees. He contributed to coaching manuals with respect to physical fitness, skill development and psychology. He was also involved in coach education for athletics teachers and coaches. He contributed to skill development and sport psychology aspects of coach education for a variety of sports with the National Coaching and Training Centre (NCTC), now Coaching Ireland.

Eddie O’Sullivan played for Garryowen Rugby Club at the same time as PJ, remarked that Smyth was “notorious for his extremely high level of fitness and his work rate around the field and was regarded as a very skilful prop when he played with Garryowen.” He believes that Smyth’s retirement from coaching rugby was a huge loss to Irish rugby.

Some of the Students He Influenced

John Sheehan recalled the endless hours PJ spent helping students like Tony Ward curving a rugby ball over and back along a line in the sports hall, and working on passing and evasion skills, to helping anyone improve their sporting performance or academic understanding.

“Proper preparation was the basis of performance”

John Power (Rugby Player and friend)

“He would be someone that I would be eternally grateful to as he was probably the main influence on my career. In every area imaginable he was brilliant, from passing on the tools of the trade to advice on all sports and especially on what direction to take in career decisions”

Dave Mahedy, Graduate
Ward himself says that when he first met PJ, he had no idea as to the major influence the ‘self-effacing Smyth’ was to have on his sporting development in the years to follow, and not just on his development but on many other Irish high performance athletes in the years that followed.

When Eddie O’Sullivan moved positions from playing fly-half to wing when he joined Garryowen Rugby Club in 1978, Smyth helped O’Sullivan reinvent himself as a player. Through a combination of strength training, plyometrics and track work, which according to O’Sullivan was ‘way ahead of it’s time’, Smyth helped O’Sullivan transform. O’Sullivan believes that the specific skill training that pertained to being on the wing, was a huge factor in helping him be selected for Munster. O’Sullivan has also reported that Smyth was hugely influential on him as a professional rugby coach, providing him with understanding and knowledge of the development of skill pedagogies and sports psychology. Smyth has made many lifelong friendships with the graduates from NCPE, TCE and UL. He was groomsman for Eddie O’Sullivan (which PJ almost missed by getting lost on the way to the Church!) and I am reliably told that he was asleep within minutes of leaving the reception, as it was long past his bedtime!

Kindness & Generosity

Students and staff describe PJ Smyth as giving his time before, during and after lectures. Greg Knipe, a lecturer in International Tourism who retired from UL in 2010 stayed with Smyth for a number of years, when he first came to Limerick. Knipe said they were like ‘chalk and cheese’, he had a love for rock’n’roll music and good wine, and PJ did not! Colleagues and students repeatedly state that Smyth was always obliging with both his time, knowledge and books. As he has done in the past, he continues to inspire, encourage and motivate others. Dave Weldrick remarked that if you were interested in physical conditioning, strength training, motor learning or sport psychology, it was not to the library that you went, but to Smyths office, where you could borrow books but also engage in lengthy discussions with Smyth.

“Time stood still when PJ was engaged with you. He gave you all of his time and all of his knowledge. I have never met a more generous man”.

Greg Knipe (former lecturer in UL)

“I have been so very lucky and privileged to have been always working at something which I love. I remember my father predicting when I was in primary school that I would never leave school and that is what happened. I have always been a student or a teacher whether it be at school or university. There is a saying that goes something like “...when you are a teacher it is by your pupils you will be taught.” That certainly applies to me. It has been a great privilege to have worked with both physical education and sport and exercise science students who have made their mark in society in many different ways both in Ireland and around the world. I have also had great colleagues who have guided and inspired me in so many different ways.”

I asked PJ what his memories are of teaching in the Physical Education and Sport Sciences Department and after much thought he arrived at this conclusion:

To paraphrase all those that contributed to this article......PJ Smyth is dedicated and sincere and has embraced his life as an educator. He is sensitive, considerate and understanding of others and is regarded as one of this world’s ‘true gentlemen’. He has a gift of mimicry and intelligent humor. In the past (am not certain about now!) he suffered from gargalesis (tickles), and some of his students took delight in sitting on him and tickling him until tears rolled. PJ has an extensive music collection, and some of his favourites include Mario Lanza and Maria Callas. He was a fan of Pavarotti ever before people heard of Nessum Dorma. The story would not be complete without reference to his love of bananas. In the past he was known to arrive at training or coaching courses with two gear bags... one for his kit and one full of bananas! To this day, the banana is never far from his hand and he will always have one to offer you if you are hungry.

PJ Smyth is a man who supports all staff and students in the PESS department and is the first to applaud any personal accomplishments achieved by the staff and students. He continues to collaborate with existing staff in the department. Ed Coughlan, a teaching assistant in the department describes Smyth’s ability to apply science and research, succinctly. "It is a rarity, but his understanding of the science and the research is so complete that he knows how to join-the-dots for the students and athletes alike". Tadhg MacIntyre (Lecturer in Sport, Exercise & Performance Psychology) has known PJ for many years and defines Smyth as a ‘polymath with a vast array of expertise across multiple domains and an insatiable intellectual curiosity’.

There are an abundance of past and present staff and postgraduate students in the PESS department who would have queued at my office to offer their memories about PJ. I am without doubt that their stories would reinforce all that I have presented in this feature.

Jennifer Joyce, PESS PhD student, 2013
Can the handicapping system used for golfers be applied directly to golfers with physical disabilities?

This is what researchers from the University of Limerick and Stellenbosch University, South Africa have set out to test in a joint research project that explores the areas of sport vision and biomechanics in golf. During the course of ten days, the researchers from the Sport Technology Unit of the Centre for Human Performance Sciences at Stellenbosch University, and the Department of Physical Education and Sport Sciences at the University of Limerick tested nearly 50 able-bodied and disabled golfers with handicaps ranging from professional to mid-twenties.

Unlike Paralympic sports, in which athletes take part in various categories based on their specific disabilities, people with all types of disabilities play against each other in golf based on a golf handicapping system. According to anecdotal reasoning, the fact that people have a disability – be it deafness, blindness, cerebral palsy or an amputation – should not be a consideration in classifying them for golf competition. Their ability to play golf should be the only consideration in categorising them for participation in golf.

"With this research we want to test if this is indeed true, or whether it would be more 'fair' to modify the golf handicapping system when applying it to golfers with disabilities," says Mr Surmon. According to Dr Ian Kenny golf is set to become an Olympic sport again in 2016, which makes the chances therefore very good for it to also be included in future Paralympic games. He says that once the research is published, recommendations based on their analysis of the results will be sent to the international governing bodies of golf as well as disabled golf to take into account when considering golf as a Paralympic sport event.

While golfers were showing their form over a total of 20 6-foot and 12-foot putts, and 10 drives, 28 different crucial variables were measured. During the putting exercise each golfer’s visual gaze, swing pattern and point of ball contact were recorded. During the driving exercise, aspects such as the direction of flight of the ball, the spin of the ball, and the point of impact on the ball from the club were measured.

"It’s all about finding similarities and differences in the biomechanics and visual skills between an able-bodied and disabled golfer, and then comparing that information to their currently assigned golf handicap” says Shaun Surmon, Manager for Research and Development for the SU Centre for Human Performance Sciences.

The necessary precision testing and monitoring of the driving and putting abilities of these golfers were completed using the Tobii visual gaze tracking instrument, ultrasound-based technology of the Sam PuttLab, and FlightScope and Vector ball launch monitors. The data were collected by Mark and Ian at the indoor facilities of the Swingfit Performance Academy at De Zalze Golf Estate outside Stellenbosch.

Left leg amputee golfer Craig Moorgas warming up for his drive performance assessment.
Anecdotal information from the disabled golf community have raised questions concerning the effectiveness of the golf handicap system applied to all disabled golfers. An example of which is deaf golfers competing on the same level as cerebral palsy or amputee golfers. Initial observations have shown some vestibular and balance dysfunction with deaf golfers, particularly with the drive shot, but not until we fully analyse everyone’s performance and movement will we be able to make recommendations.

According to Mr Surmon, it’s not just the researchers who benefit from this project. “All participants received an easy-to-understand graphic report about their putting performance, as well as a video of their driving abilities which they can again use in conjunction with a coach to fine-tune their game. In their take-home feedback each golfer’s performance on our tests were compared to the performances of golfers playing in the European professional tournaments,” he explains. “These feedback reports are quite valuable for the continued assessment and further honing of each golfer’s game,” said Mr Dawie van Wyghk of the Swingfit Performance Academy.

Investigation in this area of research will continue through 2013 with South African postgraduate researcher Jacobus Breytenbach joining Mark and Ian at UL as part of the ERASMUS MUNDUS Masters in Adapted Physical Education, and continuing collaboration with The Centre for Human Performance Sciences at Stellenbosch University.
An Investigation of the Support Required for Development of High Performance Swimmers

Lynne A. Algar, Department of Physical Education and Sport and Exercise Sciences
Áine MacNamara Institute of Coaching and Performance,
University of Central Lancashire, England

Côté (2003) identified that gifted athletes need adequate social and structural resources as well as high levels of motivation in order to develop superior performance.

The objectives of this study were two-fold, firstly, it aimed to identify the critical factors required for successful progression of a developing high performance swimmer. Secondly, it aimed to examine the effectiveness of the sport system in providing this support at both a social and resource level.

Data was collected by means of semi-structured, qualitative interviews with a purposefully sampled group of club and high performance swimmers (n = 7). To triangulate the data, and guard against bias, a sample of coaches (n=7) and service providers (n=2) were also recruited. An inductive content analysis was conducted following the recommendations of Coté, Salmela & Baria (1993).

Results suggest that a range of factors including the coach-athlete relationship, and the sport-academia balance impact on the athlete’s ability to progress through a development programme and succeed as a high performance athlete. Weaknesses were found in the preparation of swimmers for the transition from swim clubs to the High Performance Centres (HPC) and the capacity of the coaches to train an athlete to a high performance level. It is suggested that a more ‘open door’ policy be adopted throughout the sport’s infrastructure to allow athletes and coaches experience the HPC environment and learn as part of coach development.

Physical Activity Health Lifestyle and Sports Institute (PAHLS)

In the last 2 years the Department of Physical Education and Sport Sciences has worked with the University of Limerick Sports Department to develop the Physical Activity, Health, Lifestyle and Sports (PAHLS) Institute.

The mission is to ‘Create an environment that breaks new ground in the practice and research of physical activity, health and sporting excellence’. The University of Limerick’s vision is that ‘the University of Limerick will be recognised as a national and international leader and innovator in the research, professional preparation and practice of physical activity and sport, thereby enhancing the lives of individuals, the region and the nation’.

The PAHLS Institute will be formally launched during 2013.
Outreach Activities

Type Blade Runner into your computer’s search engine and a 1982 science fiction movie starring Harrison Ford will pop up first. Scroll down and you’ll find Oscar Pistorius, the South African double amputee runner who made athletic history by competing in the 400 m relay final in the London 2012 Olympics.

But Simon Baker is making his mark. He lives and trains in Limerick - and he is Ireland’s first and only marathon Blade Runner. On the 16th of January 2012 Simon Baker began a journey to run the Dublin City Marathon. No one has achieved this before. He underwent nine months of intensive training, but he didn’t do it alone.

Who is Simon Baker?

He had a professional team behind him: Jason Kenny, Strength Training and Nutritional Coach of Forever Fit Promotions, who headed up the project, along with Alan Ward (National 50m Pool Manager of the University Arena), Karen McCreeesh and Neasa Canavan (Physiotherapy, University of Limerick), Dr Drew Harrison and Dr Ian Kenny, (Biomechanics PESS, University of Limerick) and Dr Brian Carson (Physiology, PESS, University of Limerick).

The Accident in 2004

By his own admission, Simon Baker was an entirely different person eight years ago. He had moved from his native London to work as a plasterer. Simon lost his leg in 2004 from a building site accident.

In 2008 after a battle with depression Simon realised that he needed a challenge to turn his life around and this took the form of completing the Dublin Marathon which he completed earning himself a place in the Guinness Book of Records (fastest marathon on crutches on one leg).

In 2008 after a battle with depression Simon realised that he needed a challenge to turn his life around and this took the form of completing the Dublin Marathon which he completed earning himself a place in the Guinness Book of Records (fastest marathon on crutches on one leg).

From this day on Simon decided to set himself a challenge each year with his end goal to run a marathon in under 3.5 hours.
Support for the Project

Jason and Simon got to work quickly, contacting Alan Ward and Dave Mahedy of the University of Limerick, to set the ball rolling in Autumn of 2011. “They were very enthusiastic, supportive and excited about the whole idea from the outset. We were immediately offered full use of the university’s facilities.”

Simon approached Ottobock, a Dublin company that manufactures the specialised blades. They too promised their full support, as well as sponsorship.

The project was supported by Jan Ottoson and Donna Fisher from human prosthetics company IDS Independent Disablement Services & Otto Bock and Dave Mahedy Arena Manager, University of Limerick.

The Pistorious Influence

For those who hadn’t been paying attention during the London 2012 Olympics, Oscar Pistorius is a South African 400 metre runner made athletics history by being the first disabled runner to compete at the Summer Olympics using two carbon fibre artificial limbs or blades. At first he was prevented from competing against able-bodied athletes, but a Court of Arbitration for Sports in Lausanne reversed this decision in 2008. And now the South African is a genuine superstar with a string of blue chip sponsors.

Jason Kenny takes up the story. “Simon had definitely been influenced by the Pistorius story. He had immersed himself reading and learning about the carbon fibre blades, the technology available and the possibilities it created.

“We discussed the project at length and came up with the idea of running the Dublin City Marathon using a blade. It hadn’t been done here before. As well as that, no Irish amputee athlete had ever competed in a track event in the Paralympics and no centre of excellence exists in this country for amputee athletes or disability sports in general.”

Biomechanical Assessment

Dr Drew Harrison and Dr Ian Kenny set about designing bi-monthly biomechanics and performance tests. The tests included start excursion balance, gait analysis for left and right leg underfoot force, stride length and ground contact time, and sled drop jump reactive strength. “The biomechanical tests had two purposes. Firstly, to assess left and right leg differences to help inform Jason what conditioning work was needed and secondly, to continually monitor and give a boost to Simon through data that his training was going well” said Dr Kenny. Test days were supported by PESS biomechanics PhD researcher Laura-Anne Furlong.

Simon Baker performing biomechanics balance tests
Outreach Activities

Physiological Testing
Brian Carson and PESS researcher Ciara Sinnott-O’Connor periodically provided physiological support and feedback. Simon underwent a number of tests in the lab including measurement of his maximal oxygen consumption capacity ($\text{vVO}_2\text{max}$) and his lactate threshold. According to Dr. Carson this information “indicates the amount of oxygen Simon is capable of consuming which determines the availability of energy to the working muscles and the running speed he could tolerate before accumulating lactic acid in the blood. As

Long Term Goals
According to Jason “What was vital from the outset was that we straight away achieved credibility. Our short term goal was to get Simon to run the Dublin Marathon in under three and a half hours. But our long-term goal is to set up a template for a future centre of excellence in this country so that Irish track and field amputee athletes can compete in future Paralympics with the best possible support system.”

Re-Teaching Simon’s Body
Jason admits there was a steep daily learning curve: “Simon had never walked properly, let alone run properly! We had to teach him to do just that. Change his posture. Alter his stride pattern. Retrain his brain’s muscle memory. His right leg had turned almost outwards since the accident. His left side of his body dominated his right side. So we had to break him down to start again and build him back up, block by block.”

Through intensive training involving specific running and posture exercises and brutal core work, Simon and Jason had succeeded in turning his right leg back to its proper alignment. Jason says it was a pivotal moment in the project, which is now called Out on a Limb: “I never doubted the man’s determination. I had walked alongside him from Dublin to Limerick in hailstones. I had seen him get into a boxing ring time and time again. I had seen the sores on his leg. I’d never heard him complain - almost! But now all these scientists and experts could see that determination and the subsequent results for themselves.”

“We all keep on telling each other that if we can learn and achieve this much in nine months, imagine what we can do in four years, in time for the Rio de Janeiro Paralympics. The sky really is the limit.”

Dublin Marathon 2012
Three weeks before the marathon and the disappointing news came from Simon’s doctor advising no more running until a severe case of shin splints (tibial periostitis) subsided. An MRI scan revealed bone marrow edema (swelling) and despite plenty of rest and non-impact training, Simon’s symptoms did not lessen. Simon made the tough decision to go to the start line still in some pain and complete as much of the race as possible. He was applauded all the way to 10 miles where at that point he had no choice but to withdraw.

Where to Now?
Simon is now on the road to recovery, is back training and is setting his sights on Limerick Marathon in May 2013.

The long term goal is to set up a template for a future centre of excellence in Limerick so that Irish track and field amputee athletes can compete in future Paralympics.
The participation of persons with disabilities in adapted physical activity (APA) has been clearly established through research (Sugden & Chambers, 2006). The benefits of physical activity to individuals with disabilities have been shown to have a particular impact in the areas of general fitness (Block, Lauer Hornbaker & Klavina, 2006), motor skill development (Crawford, Mac Donncha & Smyth, 2007; Reid, O'Connor & Lloyd, 2003), cognitive development (Wright & Sugden, 1999), as well as language, communication, and self-regulation of behaviour (Powell & Jordan, 2001).

Additionally, recreational and sport activities provide the opportunity for children and adults with disabilities to be included in their broader communities, benefiting those with and without disabilities in many ways. Those with disabilities learn important social skills while their typically developed peers learn sensitivity to others who are perceived as different to them (Batshaw, 2002).

However, while the benefits of physical activity are well documented for persons with disabilities, barriers still exist discouraging their involvement. A research paper published by the National Disability Authority (2005) entitled; ‘Promoting the Participation of People with Disabilities in Physical Activity and Sport in Ireland’ highlights the factors which impact participation levels among people with disabilities in physical exercise and sport in Ireland.

Listed within this paper were the following major barriers:
- Poor physical education provision in schools
- Negative school experiences
- Low expectations from teachers, families and peers
- Lack of access to facilities and programmes
- Lack of experience of the benefits of physical activity
- Issues with cost
- Not acquiring physical literacy while young
- Lack of trained physical education teachers

One way in which to remove some, if not all, of these barriers and promote physical activity for children with disabilities in Ireland is through the effective preparation of its future physical education (PE) teachers. Yet, the ability of these individuals to effectively plan and provide for appropriate bouts of adapted physical activity remains an issue.

Traditionally, in the Irish context, PE graduates work within the post primary school sector. Likewise, PE graduates can also be employed in a part-time capacity (2 hours/week) in special school settings, as special schools also cater for children of secondary school age, up to the age of 18 years. Across both settings, graduates will be required to teach equally to students with and without disabilities, attempting to facilitate the most inclusive learning environment possible. Unfortunately, most of these future professionals will have little to no experience in creating such an environment. Current PE teachers have indicated that their undergraduate training was extremely inadequate with regard to preparing them to work with children with disabilities (Department of Education and Science, 1999; House of the Oireachtas, 2005; Meegan and MacPhail, 2006).

Because of this ‘inadequate training’, the i-PLAY programme (Inclusive Play and Leisure Activities for Youth - Imrím) was developed. It was designed to benefit both future physical education professionals as well as children and young adults with special needs in the Limerick area.
Based within the Physical Education and Sports Science Building (PESS), University of Limerick, i-PLAY is a physical activity programme for children, youth, and young adults aged 5 to 21 years with special needs lasting for one hour per week across 10 weeks. As part of the programme, each participant is paired with a dedicated coach from the 3rd and 4th year Physical Education classes receiving individual attention and support from both students and staff.

To register for the programme, please contact either Daniel Tindall Daniel.Tindall@ul.ie or Brigitte Moody Brigitte.Moody@ul.ie via email or telephone: 061 202896. Application forms can be obtained from the Department of Physical Education and Sports Science website or by entering “I-PLAY” as the search term on the main UL website.

Dr Daniel Tindall, Lecturer in Physical Education and i-PLAY Co-Director explains the focus of the programme;

“This is a completely unique programme, designed to serve three main purposes: to provide young people with special needs the opportunity to play and engage with their peers during physical activity; to provide our pre-service teaching professionals in PE the opportunity to engage more fully with children with disabilities; and to provide families the opportunity to connect with one another as a way to support each other and their children with special needs.”

Additionally, the i-PLAY programme is distinctive to Ireland in that it addresses many of the barriers to physical activity highlighted in the 2005 NDA report both directly and indirectly. It offers prolonged and consistent physical activity opportunities to children with disabilities while promoting the health and social benefits associated to physical activity. i-PLAY is also the only university-based programme which provides valuable experience to its future physical education professionals through working with children with disabilities.

Dr Tindall added; “This experience will further the professional development of our students and encourage them to promote an inclusive learning environment in their future careers.”

Ms Brigitte Moody
Brigitte is a Lecturer in dance in the PESS Department. She is the Course Director for the Graduate Diploma/Masters in Dance and for the Erasmus Mundus Masters in Adapted Physical Activity. Brigitte trained as a secondary school dance teacher in Oxfordshire, England and has an MA Dance from Laban. She has lectured in dance at De Montfort University Bedford, University of Birmingham Westhill (Programme Director of BA in Creative Arts), on the MA in Applied Dance with Birmingham Royal Ballet and at the University of Leeds (Programme Director of the BA Dance School of Performance and Cultural Industries).
I n line with the continuous impetus for research and sporting excellence at the University of Limerick (UL), the establishment of Ireland’s first residential altitude training centre is a prime example of the collaborative innovation which is fast shaping the department of Physical Education and Sport Sciences (PESS). The new centre is unique in its facilitation of both unique commercial enterprise and scientific endeavor. As the boundaries of human physiology are pushed in order to both maximise athletic performance and human resistance to critical illness, altitude and the ensuing hypoxic environment has been targeted as a clear research focus. This facility will be key in servicing both R&D programmes and informing the practical application and testing of optimised altitude training strategy.

State of the Art Facilities

The National Altitude Training Centre (NATC) might look like any other house from the outside, but the occupants of No. 56 Kilmurry Village are literally living the ‘high life’. The state-of-the-art facility provides sportspeople and mountaineers the opportunity to undertake simulated altitude training in a bespoke living environment, while also availing of the world-class training facilities on campus at UL.

In support of the NATC, scientific expertise, analytical laboratory technical support and physiological testing proficiency available within the PESS department ensure a multidisciplinary approach when forming and informing individualised altitude training profiles. Plus, heavy investment and continued support of the project provided by Plassy Campus Centre ltd has allowed this ‘forward thinking’ project to develop and the level of service needed for the projects success to be sustained.

Professor Phil Jakeman, Director of the NATC at UL explains the concept behind altitude training: “The success of this mode of performance enhancement is underwritten by the fact that altitude training has been used by virtually every medalist competing in endurance-based sports over the past 10 years. Currently, the most effective altitude training programme involves ‘living’ at an altitude of 2000m to 3500m for a period of 14-28 days. This is normally achieved by athletes travelling abroad to high altitude camps away from their normal training environment and support structures. Athletes residing at this altitude find it impossible to maintain their sea-level training programme and therefore usually undertake a daily travel to an altitude below 1500m to train, returning to altitude again overnight. Furthermore, this type of residential altitude setting provides only one altitude, a one-size-fits-all approach that defies best practice in terms of specificity of training.”

Hypoxic Air Conditioning

The NATC comprises of seven bedrooms and a shared living space which can cater for up to seven athletes at any given time. The facility has installed an hypoxic air conditioning system that allows independent control of the ‘simulated altitude’ in each room, thereby allowing the NATC support team to tailor each altitude ascent profile, thus individualising the hypoxic dose for each athlete. The system is capable of simulating an altitude range from sea level to 5000m, which equates to a terrestrial altitude just below the height of Mount Kilimanjaro (5895m). The system which powers the NATC is able produce a controlled low oxygen (hypoxic) environment whilst maintaining a normal, sea level barometric pressure (normobaria).

In order to achieve this, normal air is pumped through a specialist oxygen filtration system, before being pumped...
around the residential facility through a specialist ducting network. Within the facility a bespoke central control panel enables close control of the oxygen tensions in each room as well as external feedback and analysis of the exact room ascent profiles.

Olympic Legacy

Home to the likes of Irish Olympians race walker Colin Griffin and triathlete Gavin Noble prior to their London 2012 campaigns, the benefit for athlete residents is that they can reap the benefits of high altitude training even as they sleep. Athletes from all endurance sports; athletics, swimming, rowing, cycling, triathlon, boxing and team sports such as rugby, football, hockey and tennis can benefit from altitude training. However, with no natural high altitude site available in Ireland and the UK, previously many Irish athletes have had no other option other than to travel abroad to train at considerable financial cost and with minimal support.

While travelling to “live high, train high” altitude camps has long been part of elite sport, those staying in the NATC can live high and train low without any need for relocation, plus initial acclimatisation and ascent profiles can be closely adjusted at the touch of a button. Thus, potentially ameliorating or further informing the previous identification of ‘responders’ and ‘non-responders’ via the introduction of individualised ascent programs.

International race walker Colin Griffin, a long-time advocate of the benefits of altitude training, credits the NATC with helping to get him to the Olympics. “I spent four weeks there before the World Cup event in May where I got my Olympic qualifying time, and I feel I benefited from it greatly.”

He sees real advantages to living high and training low. “So I go abroad less now for altitude training, plus when I come back I can also maintain any accrued benefits by staying in the NATC post terrestrial camps. You definitely notice the reduction in oxygen, but it’s a normal house, you can watch TV, work on your laptop and sleep while still getting your altitude exposure the same as you would up in the high mountains.”

Triathlete Gavin Noble, who usually heads to terrestrial altitude camps such as Font Romeu (France) and Sierra Navada (Spain), stayed in the house for six weeks prior to the Olympics. He also indicated how the LHTL training model was of benefit: “When you are living at the top of a mountain, it’s very difficult to do fast sessions and to do very hard sessions because there is a lack of oxygen – you’re doing a lot of long and slow stuff, which in race season you don’t really want to be doing. You want to maintain your speed and your power and that’s the benefit of Limerick NATC. You can live and sleep as if you are up the mountain but just walk out the door and you’re at sea level in your ideal training environment.”

Research and Development

Rachel Turner, Coordinator of the NATC outlines the research and development focus of the facility: “UL is pioneering a new approach to altitude training in Ireland, whereby the exact altitude required and the progressive nature of an ascent profile may be set independently for each athlete, dependent on their altitude response. This approach is centered on establishing definitive recommendations for the implementation of altitude training for different individuals, plus endeavors to identify a set of biomarkers which may be used to more closely evaluate and optimise the altitude training effect. Establishing this facility in Ireland will now allow the directors of high performance sport the opportunity to better manage provision and integration of a more advanced altitude training strategy within future elite performance programs.”

Professor Jakeman concludes; “The R&D potential that this facility provides is significant for applied sports performance research in Ireland. The considerable on-site expertise within the PESS department is currently working with a number of national sports bodies and we expect significant international interest in the research capability of this facility in the future.”

The National Altitude Centre, UL is managed by Plassey Campus Centre. Booking queries relating to the facility contact: Noreen O’Shea, Manager Altitude House. Tel +353 61 202081. For enquiries related to hypoxic research and simulated altitude training programmes, contact: Rachel Turner, NATC Coordinator. Tel +353 61 234780.
I have been swimming since I was 2 years old, mainly due to my neighbour who luckily for me was a swim teacher, and great family friend. I started swimming competitively from the relatively late age of about 12 and over the next few years began my first major steps into the madness that is the sport of competitive swimming; 6am starts, pool training every day just ‘yo-yoing’ up and down that same black line countless times and gym work once a week (Or ‘dry land’ as the swimming world would put it). To any onlookers’ and as many family and friends pointed out it is just “mad and illogical to train that much,” but the continued support and trust from my parents kept my swimming dream a float and I continued to train at my ‘abnormal rate’.

I had many up’s and downs as any young sports men/women do. I made qualifications times for national youth teams and had much national success, but internationally, did not feature. I never really got an inside look at the ‘bigger picture’ but, I would not be long coming to realise the protective bubble that I had been living in. The fact is that I trained more than anyone in my home club, more than other athletes in my town or just as much as anyone in Ireland I was competing against but none of this was applicable when trying to consider myself an international high performance athlete. Even though it’s what I knew I wanted more than anything, I was yet to taste any of the life of a full time International athlete.

I was accepted into the Bsc. Sport and Exercise Sciences beginning September 2008. At this time the Swimming High Performance centre was running with a full time programme under head coach Ronald Claes and contained top swimmers from all around the country.

Why UL Campus

Starting in September 2006 an opportunity arose that decided the next 5 years of my career. The first Irish High Performance swimming centre was being set up in Ireland’s first ever 50m Olympic size swimming pool in the University Arena, Limerick. I was given an opportunity to really train and see if I had what it took to be an International athlete. I travelled back and forth to Limerick twice a day which involved setting my alarm for 4.10a.m. six mornings a week and leaving school early each afternoon. Through my own keen interest in science, mathematics and my obvious obsession in sport my C.A.O. University application form was compiled with the various science and maths courses that UL had to offer. Not only the sports facilities including an elite weights room, 50m pool, indoor running track as well as the National Coaching and Training Centre a hundred metres away, but the mindset driven towards high performance sport and excellence was what attracted me. From the Munster Rugby team to the hundreds of top international athletes that have come to train here, and left with nothing but good experiences and opinions, I was very confident in the opportunities Limerick offered for success.

The Elite squad programme involves up to 10/11 swim sessions on a regular week. Training starts in the morning on deck at 5.10a.m., where 20-30mins of dry land work is done.

Dry land training involves:
- Skipping (used as a warm up.)
- Sit up’s/back up’s/plank variations. (To increase core stability strength and endurance)
- Shoulder endurance exercises and push ups.
- Hand paddle stretch cord work. (Technique focus and strength endurance/power work.)
Then to the pool! Morning sessions can be from 5/6km up to 17/18km all depending on time in the training cycle & season and the week intensity! Of course all swimmers in the squads are broken up into their groups based on their race distance. (Sprint/Middle Distance/Open Water).

In the evening we begin at 2pm if we have gym or circuit training or 2.30pm if we just have a choice land warm up/ 'loosen out' before the swim session. We then begin in the water at 3pm. Distance in the evening is usually less, ranging from 3-7km.

This regime was my life for the next four years. I progressed from qualifying for youth international competitions to being Ireland’s first top 8 finisher since 2004 at the World Championships. In 2012, I missed out on a photo finish for the 25th man at the Olympics, 10k Open Water Swim. I had unfortunately contracted a virus the week of the qualifier.

In any Olympic performance the amount of work, time and support that goes into maximising that one performance is phenomenal. I work as part of the High Performance centre UL team and my team are listed above. It is with the help of each of these individuals and the encouragement and environment created by my fellow teammates that ultimately push me to reach my utmost potential.

It is with the help and guidance of this team in co-ordination with the University of Limerick, Irish Institute of Sport and the Irish Sports Council that help me to manage my lifestyle and help me train as effectively and efficiently as possible.

I was encouraged and helped through the Institutes Athlete support programme to break up my undergraduate degree course over 5 years into manageable chunks. Through the constant and continued support from the University and PESS staff and their interest and understanding of the demands in High Performance sport, I have been able to optimally manage both my Sporting and Academic lifestyle. Without this support it would not have been possible to achieve what I have.

It is my intention to finish my degree in 2013 and continue in my pursuit of excellence in sport. I am confident the lifestyle and academic knowledge I have acquired over the past four years will stand to me for the rest of my sporting and professional career.

I believe it has also made me into the person I am today. I hope to continue to enjoy and excel in the world of sport.

Some people dream of success... Others stay awake to achieve it!
A Multidisciplinary Approach to Sport Science

Lynne Algar, M.Sc.

Lynne Algar is a PhD student in the PESS Department. She is a qualified physical therapist, Triathlon Ireland Tutor, Irish Triathlon Coach and has represented Ireland in Sport at International competition. In this feature, Lynne explains how her qualifications and experiences to date have helped her gain a holistic understanding of athlete performance and development.

Masters Research

On completion of my undergraduate degree in Sport and Exercise Sciences (SES) in 2007, I was keen to extend my final year thesis to a Masters level of postgraduate research. Reflecting many of the performance issues I encountered as both an athlete and coach, these studies examined the effects of Cryotherapy and forms of Contrast Water Therapy on the recovery of muscle post exercise. Findings from these studies have been presented at conferences and published in 2011 in the Scandinavian Journal of Medicine and Science in Sport with colleagues Joe Costello and Prof. Alan Donnelly.

Physical Therapy

Reflecting on my involvement in sport I have always been keen to ensure that my studies have practical applications to both coaches and athletes. During my Masters, I registered and completed my qualifications as a Physical Therapist (Irish Institute of Physical Therapy, 2009), and operated a small clinic mainly working with sports people. The flexibility of the part-time diploma combined with strategic management of my time allowed me to complete both qualifications at the same time. Recovery and injury care are two areas which athletes must manage correctly in order to progress. As a therapist, my treatments can include, recording case histories and physical assessments of the client, deep tissue work, mobility and stretching, strength and stability work, dry needling and strapping. I have travelled with elite triathlete and athletic squads to altitude and warm weather training camps and to international competition to provide both pre and post -training-race treatment.

Doctoral Research

My postgraduate studies until 2010 primarily focused on physiological and conditioning aspects of sport performance. As a coach and athlete I recognised the importance of having a holistic understanding of athlete performance and development. Furthermore, I understood the importance of gaining an interdisciplinary appreciation of athlete performance and development that included both physiological, psychological, systematic and social issues. My current PhD research primarily focuses on the critical factors in sports performance contributing to the success of elite athletes. This research aims to provide a method for sports organisations to assess and monitor the effectiveness of their support structure along with recommendations to strategically manage developmental and high performance environments.

Teaching

On registering for my PhD in 2010 I accepted a 2 year scholarship from the PESS department for which I was responsible for designing, delivering and evaluating a number of modules in Physical Education and/or Sport and Exercise Sciences (SES). I have worked both independently and as part of a collaborative team on various undergraduate sport and exercise science modules including; Basic Exercise Physiology and Qualitative Biomechanics.

Triathlon Ireland Tutor

I believe that it is important to advance both my academic and coaching experience and knowledge in order to maximise the impact I can have in the sport performance field; in essence these two factors should work hand-in-hand. For the past two years I have worked part-time as a Tutor for Triathlon Ireland to facilitate Level 1 and Level 2 Triathlon Coaching courses. In order to fulfil my role as tutor I am required to contribute to the course content and prepare the delivery method in a structure that is effective for the coach’s learning. Practical assignments, guest speakers, problem based learning case studies, and peer supervised coaching sessions are all methods I use for the delivery of the course.
To further my education as a performance coach, Triathlon Ireland have nominated me to take part in the Irish Institute of Sport Pursuit of Excellence Programme. This programme is designed to reflect the need to develop and support Ireland’s top junior and development coaches. This programme I hope will allow me to develop my coaching skills in a performance driven context, through self directed learning, and mentorship.

Athletic Experience

From a young age I competed both nationally and internationally at Tetrathlon events (cross-country running, pistol shooting, horse-riding, and swimming). On winning the International events consecutively in 2000 and 2002, I made the transition to Modern Pentathlon. At the time the Modern Pentathlon Association of Ireland was in its infancy, and I was kindly invited to train part-time with Great Britain’s female coach Istvan Nemeth at Bath University. The facilities, social resources and coaching I was offered were significantly beneficial to my development. Since then, I have continued to compete at a national level in various sports like triathlon, and open water swimming.

Although my qualifications allow me to work in a multi-disciplinary way, it has been the experiences of working with coaches, therapists, athletes, parents, and students that has shaped me. I am always learning. If you are not moving forward then you’ll be left behind!

Lynne Algar has recently been appointed to the position of Training and Development Tutor (Athlete Support Officer) at Bath University.

Her roles include; delivering vocational qualifications, managing/ educating student-athletes, and coordinating the Talented Athlete Support Scheme at the University.

To maintain transparency between the sport system and the development of individual athletes it is necessary to share the content of each athlete’s training programme and the athlete’s prospective seasonal and long term objectives with the Performance Director. In 2010, at a review meeting it was identified that weaknesses emerged in the athletes’ strength and conditioning fitness. In response I created a generic and individual training programme for each athlete on the Junior squad. I also produced an assessment template applicable to the demands of the sport and held conversations and sessions with the coaches and athletes to educate them in correct technical performance of the exercises. Prior to nominating a Junior athlete to competition, it is my responsibility to consider athlete’s fitness, mental readiness, and psychological maturity as well as the the organisations budgetary constraints.

PUBLICATIONS


Costello JT., Algar LA, Kehoe BJ., Kelleher SW, Coughlan LJ., 1, Donnelly AE., 2010, Effects of Cold Air Cryotherapy (-110 oC) on Muscle Soreness and Function Following Eccentric Exercise in Humans J Physiol Proc Physiol Soc 19 C16

I graduated from the BSc. in Sport and Exercise Sciences in August 2009 with a first class honours degree. I completed my co-operative education placement in Cardiff Metropolitan University with the Sports Biomechanics research group. This placement focused on biomechanics and coaching and working as part of a multi-million pound research project looking at feedback in elite sprinting. In addition, I worked as sport science support to the Welsh Rugby Union and Welsh Athletics. I obtained a diploma in sports massage during this time and worked as a therapist in the university clinic, with a number of different sports teams in the Cardiff area and the British Army.

In October 2009, I commenced my PhD research in tendon stiffness in the Physical Education and Sport Sciences (PESS) department under the supervision of Dr. Drew Harrison.

Laura-Anne Furlong is a PhD student in the Physical Education and Sport Sciences Department. Her PhD research involves the design of a novel, controlled method of studying muscle-tendon interaction and mechanics of the plantarflexors in vivo during dynamic activities. This methodology is currently being used to study differences between healthy and injured tendon. Her research is funded by the Irish Research Council for Science, Engineering and Technology (IRCSET) and by a University of Limerick Advanced Scholars award. Laura-Anne is well known in Irish Hockey circles. She is the Strength and Conditioning Coordinator with the Irish Hockey Association for all underage (U16, U18, U21) international teams. In 2012 Laura-Anne received a Gold President’s Volunteer Award and one of three Outstanding Achievement awards from the University of Limerick for her contribution to Irish Hockey. In this feature Laura-Anne talks about the importance of volunteering in sport and explains how her research experience and knowledge is playing a key part in identifying appropriate strength and conditioning programmes for the young athlete and preventing overuse injuries.

Irish Hockey Association

Not long after starting, I received an email looking for volunteer strength and conditioning coaches to work with the Irish Hockey Association’s (IHA) underage international teams. As I had been a keen hockey player since secondary school and had completed my Level 1 coaching course, this caught my eye. My application was strengthened not only by having a degree in Sport and Exercise Science but also the practical experience of working with athletes.

The IHA is responsible for overseeing and developing all areas of the sport in the 32 counties.

Hockey is played by 37,000 people in Ireland with 65% of players aged U18

Hockey fever hit Ireland in 2012 when Ireland succeeded in not only attracting the men’s Olympic Qualifier to Dublin in March but also the success of both the men’s and women’s senior sides qualifying for the qualifier finals. The men’s Olympic hopes were shattered with a goal in the last eight seconds from the Koreans but building the road to Rio has well and truly started.

JAG (Junior Age Group)

The junior age group (JAG) teams refer to the U16, U18 and U21 teams who are all managed and coached by a large team of volunteers. The JAGs are where the majority of my work has been concentrated and the group I find most rewarding to work with.

When working with youth athletes, the primary aim should never be to win all around (the ‘peaking for Friday’ approach). Instead, you look to develop players for the future, building foundations for players who you hope will one day represent Ireland at senior international level. Even if they do not become full seniors, you try to instil a love of physical activity and sport into them and know that you are helping them build good habits from a young age.
A Multi-faceted Role

Since I started with the IHA, I have coached two U16 and one U18 team to European Championships (Spain 2010, 2002 and Holland 2011 respectively) as well as one U17 team which played in the Youth Olympics in Singapore, the first time Ireland had ever sent a team sport to the Games. My responsibilities involved:

- Designing prehabilitation programmes
- Testing
- Periodisation
- Programme Design and Individualisation

This could only be achieved by attending all the national camps in Dublin and Belfast and meeting with all players.

Application of Sport Science

Although my role was as a strength and conditioning coach, I was in essence working as the team sport scientist. Most governing bodies are now working with much smaller budgets than before so need people who can multi-task. The broad and varied nature of the Sport and Exercise Sciences (SES) degree in the PESS department gives students a broad foundation and experience in all the key areas of sport science.

Approaching the Europeans Championships (Holland 2011), I was responsible for other aspects of sport science such as hydration testing, video analysis, recovery strategy design and massage. A key role of the conditioning coach is the monitoring of player welfare. All players’ physical activity levels were recorded in diary form every week. I examined athlete’s diaries and monitors for indicators of burnout, a problem which can commonly occur in U18 players who are also studying for their Leaving Certificate. At the moment we are looking to build that into an online system which not only aids player management but is also an additional coaching resource and is a lot more interactive for players.

In 2010 I was appointed as the co-ordinator of all JAG strength and conditioning with responsibility for all the strength and conditioning coaches and sport science support at U16, U18 and U21 level for both boys and girls. This involved overseeing the recruitment of coaches for each team and acting as the link between the senior and JAG coaches. This is vital in any NGB to ensure continuity between teams and that athletes develop along a continuum.

An aspect of this job that is of particular relevance to my work in PESS is identification of research projects that may be of particular interest to the IHA. This year we have four final year SES students investigating injury patterns and notational analysis of elite underage hockey in Ireland. These projects are of great practical importance to the IHA in terms of helping the association utilise an evidence-based practice approach and aids in optimising the JAG strength and conditioning programmes.

Hooked for Life-A Model of Athlete Development

Over the last two years I have been involved with a working group to develop a model of athlete development. “Hooked for Life”, is Irish Hockey’s athlete development model, which was launched in October 2011. This model was novel in its incorporation of a recreational as well as elite performance strand in addition to accounting for players who have dropped out of the sport but would now like to return. I led the sport science and sport medicine section and contributed to the fundamental stage where basic movement literacy is established in young children.

Bridging the Gap in Knowledge

The group as a whole was involved in giving feedback in relation to technical and tactical development, coaching courses, the competitions calendar, game design, player retention, involvement of college-age players in social hockey and resources design. One of the hardest parts of my role was to make literature written for the exercise physiologist, biomechanist or psychologist accessible to the general public. Too often sport scientists can pitch scientific concepts at a level too high for the layman, when their aim should be to bridge the gap between science and the practitioner or athlete. It was key to make sure the information provided for parents and coaches was easy to follow, and resources created are now in hockey clubs and schools around the country.

I learnt a huge amount over the course of the last three years in areas I never thought I would have worked. I have gained insights and invaluable experience the lecture hall can never replace across a wide range of sport science-related areas. My roles from the outside may look different but they are all interlinked. My work has not just been of benefit to the organisation but has also helped players and coaches to help themselves in the long-term which should be something we all should aim for in our work.

In recognition of my voluntary work with the IHA, last year I received a Gold President’s Volunteer Award and one of three Outstanding Achievement awards from the University of Limerick. Seeing one of my players make her first senior international debut last year was a proud moment of equal measure, knowing I’d played a small part in helping her get there. It also gives me a great sense of achievement knowing that I am giving something back to a sport I enjoyed so much when I younger. In terms of my academic career, the IHA has filled my CV with a wealth of experience.

Students and graduates need to search for the different voluntary positions available within sporting organisations and teams. They should apply for them and get involved, as in my case…. you never know what or where it may lead to.
The University of Limerick established the President’s Volunteer Award Programme in 2010 to encourage students to engage with their communities and become lifelong believers in social responsibility. On October 17th 2012, 130 Students representing undergraduate, postgraduate, international and Erasmus students were honoured at the President’s Volunteer Award Ceremony. Six PESS students were honoured: Sean Foden, Barry O’Brien, Edel Ni Mhurchu, Eanna Kennedy, Laura-Anne Furlong, and Seamus Gallagher.

Laura-Anne Furlong was also selected to receive the ‘Outstanding Award’ which is presented in recognition of individuals who have made exceptional contributions to society through their volunteering work. Laura-Anne was honoured for her exceptional volunteer work towards the development of the Irish Hockey Association.

In 2012, three full time PESS PhD Students were awarded a Postgraduate Research Scholarship from the PESS Department. Each scholarship is for the duration of 4 years. The postgraduate scholars and their areas of research are:

**Kris Beattie**
Research: The effect of strength training on performance in endurance athletes

**Niámh Whelan**
Research: Analysis of kinematics and muscle activation patterns in athletic practices

**Luna Rizzo**
Research: The effect of sedentary behaviour on risk factors for cardiovascular disease and type-2 diabetes in adults

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**President Volunteer Awards 2012**

On Sunday, April 22nd 2012 the ‘Jacinta O’Brien Plassey 10k’ was hosted by the University Arena. This event was organised by 3rd year Sport and Exercise Science students from the PESS Department as part of the Coaching Science and Performance 3 Module. In 2012, the students chose to raise the awareness of Sudden Cardiac Death (SCD). Students raised €2,000 for SADS Ireland (Sudden Arrhythmia Death Syndrome), SIDS Sudden Infant Death Syndrome) and €2,000 for The Cormac Trust Foundation. Lynne Algar and Ciaran Kelly were the tutors who worked with the students in organising this event.
The PESS Department has one of the largest ERASMUS and International semester exchange programmes in the EHS Faculty.

On average 23 ERASMUS and International students are received into PESS undergraduate and postgraduate modules each semester, and an average 11 PESS undergraduate students are selected to study abroad each semester.

In 2012 four new bilateral staff and student exchange agreements were signed: Illinois State University, California State University Long Beach, University of Chichester and Stellenbosch University South Africa.

2012 PhD Graduate Appointments

Dr. Catherine Tucker
Lecturer in Sport and Exercise Biomechanics
Leeds Metropolitan University

Dr. Sarah Breen
Assistant Professor - Sports Biomechanics
Northern Michigan University

Dr. Joe Costello
Post Doc Research Fellow
QUT, Brisbane, Australia

Dr. Michelle Dillon
Lecturer in Physical Education
Dublin City University

Niamh Ni Cheilleachair
Lecturer in Sports Science
Athlone Institute of Technology

Lynne Algar
Athlete Support Officer
Bath University

ERASMUS & International Exchange Agreements

PESS & PESS Affiliated Programmes

B.Sc. Physical Education
B.Sc. Sport & Exercise Sciences
Professional Diploma in Education
(Physical Education)
Graduate Diploma/M.Sc in Teaching Physical Education, Sport and Physical Activity
Graduate Diploma and MA Dance
M.Sc Sports Performance (Taught)
Structured PhD
Certificate in Exercise & Health Fitness (CEHF)
Diploma in Exercise & Health Fitness (DEHF)
Bachelor of Science in Exercise & Health Fitness (B.Sc.)

PESS GRADUATIONS 2012

1. Dr. Ross Anderson, ADAA and newly conferred Dr. Catherine Tucker.
2. Dr. Deborah Tannehill congratulating the newly conferred Dr. Michelle Dillon.
3. Dr. Sarah Breen pictured with supervisors Dr. Drew Harrison and Dr. Ian Kenny.
4. B.Sc. Sport and Exercise Sciences graduating class of 2012.
5. Prof. Alan Donnelly (ADR) and the newly conferred Dr. Kieran Dowd.
6. Dr. Cian O’Neill with Andrew Murphy who graduated with an M.Sc.
7. Dr. Ann MacPhail (Head of Department) with two of her newly graduated PhD students, Dr. AnnMarie Young and Dr. J.T. Deenihan.
For the 4th year in succession, Dr Cian O’Neill coached a team to the All Ireland Final. Having helped guide Tipperary to 3 successive finals, he switched codes back to football in 2012 and guided Mayo to the All Ireland Final. The department wishes Cian all the best in his new role for 2013 with Kerry Football. Cian was also part of the backroom team of the UL Huskies Basketball team that won both the League and National Cup double last year.

Dr Ross Anderson was appointed External Examiner, University of Ulster for a four year term.

Dr Ian Kenny was appointed External Examiner, Athlone IT for a three year term.

MSc in Sport Performance was professionally accredited by two international bodies:
- National Strength and Conditioning Association of America (NSCA)
- International Society for Performance Analysis in Sports (ISPAS)

Dr. Ann MacPhail and Professor Mary O’Sullivan were Guest Editors in a published special issue of the journal Quest featuring papers from keynote speakers from the 2012 AIESEP conference hosted by the University of Limerick, Education and Health Sciences, Physical Education and Sport Sciences and the PEPAYS Research Centre.

Dr. Ann MacPhail was Guest Editor in a published special issue of the journal Physical Education and Sport Pedagogy featuring refereed papers from 2012 AIESEP International Conference hosted by the University of Limerick, Education and Health Sciences, Physical Education and Sport Sciences and the PEPAYS Research Centre.

Professor Mary O’Sullivan and Professor Judy Oslin were Guest Editors in a published special issue of Irish Education Studies (Vol. 31, No. 3) featuring the work of numerous PEPAYS researchers.

Dr Ian Kenny was appointed to editorial board for the journal Sports Engineering.

The 5th Annual PESS Ball took place on October 31st in the Strand Hotel with 310 guests from the PESS student and staff population attending this event. Organised by Dr Cian O’Neill (Course Director for the BSc. Physical Education), this event raised €3,500 Euro for Pieta House in Limerick City, the charity chosen by the PESS students themselves. This Annual Event has now raised over €12,000 Euro for charities in the Limerick city and county region over the course of the last 5 years.

8th March 2013
PESS Building Official Opening
- 16h00 PESS Graduate Talks
- 17h00 Reception
- 18h00 Minister Jimmy Deenihan T.D. Official Opening

BOOK LAUNCH
Research and Practice in Physical Education
London: Routledge
Tannehill, D., MacPhail, A., Halbert, G. & Murphy, F. (2013)
13th March
P1033 PESS Lecture Theatre
Launch by Prof Sarah Moore and Anne Moran

6th March, 3rd April, 1st May 2013
PESS UL40 Research Seminar Series
PESS Faculty and Researcher talks on:
- Motor Development
- Physical Education Teacher Education
- Golf Performance Analysis
- Ulster Rugby S&C.
See PESS Facebook for details

21st April 2013
Jacinta O’Brien Plassey 10k
See www.jacintaobrien10k.com for updates and registration closer to the date

13th & 14th June 2013
PE PAYS Research Forum
Dublin City University
2013 theme ‘Youth Sport’
See PE PAYS 2013 Info
Physical Education & Sport Sciences
Department
Telephone: + 353 61 202896
FAX: + 353 61 202814
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