# Before and after the spotlight

ASPAH Conference 2018
1st & 2nd December
Sofitel Sydney Wentworth
Sydney

ASPAH
Australian Society for Performing Arts Healthcare

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*Welcome to Conference 2018!*

If you work in the performing arts industry in Australia, ASPAH is your organisation.
We're a not-for-profit organisation that advocates for holistic and best practice healthcare for all performing artists and industry workers. Our membership includes performing arts, researchers and healthcare workers who are passionate about improving performance and health outcomes for our industry. We understand that while history sometimes glorifies "suffering for our art", a healthy artist produces great work and can still go home at the end of the day able to enjoy life to its fullest.
We look forward to learning, sharing ideas, and enjoying conference 2018 with you!

WORKSHOPS

PANEL Discussion

SURVEY

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# Welcome to ASPAH's 10th Annual Conference and AGM meeting.

What a monumental milestone this is for us, a not-for-profit organisation, to be providing Australia's peak conference for performing arts healthcare to artists, the behind-the-scenes workers of the performing arts industry, educators and the healthcare professionals. I am very proud to see that ASPAH and its members have contributed to the worldwide cause of spreading the Performing Arts Healthcare message to the relevant people and institutions.

It is only with your support that our organisation has flourished and been enabled to provide a range of free online resources for performing artists and an Australia-wide directory of healthcare professionals who are passionate about doing what's best for performing artists. Of course this is not where ASPAH's work and mission stops. A few examples of our ongoing commitment to dissemination and research in performing arts healthcare is the recent launch of the Paulette Mifsud Memorial Seed Grant and of course this conference.

I present this year's conference program to you in excitement. The scientific rigour, diversity of disciplines and level of presenters are absolutely amazing and are a testament to how far performing arts healthcare has come internationally, especially in Australia. Together with Sofitel Wentworth (who is a sponsor of this conference), we truly believe you will enjoy every moment of the formal program and conversations throughout this conference.

Dr Cliffton Chan
Treasurer and Co-Conference Chair

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Dr Luke Hopper
Peta Blevins
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Ms Janet Karin
Dr Karen Lonsdale
Prof Gene Moyle
A/Prof Leslie Nicholson
Dr Margaret Osbourne

### Program Design/editor

Amy Naumann

# INFO AND MAPS

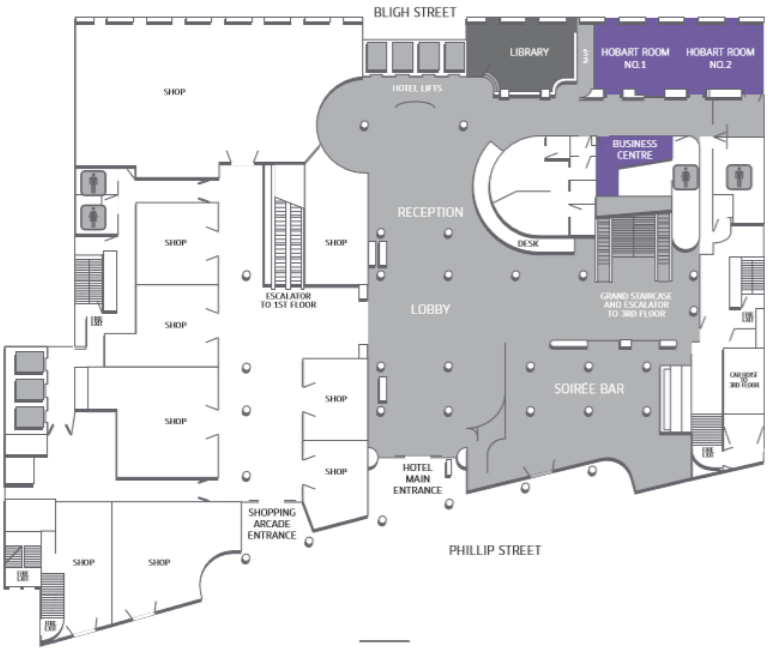

## Conference Location

Sofitel Wentworth, 61-101 Phillip Street
Sydney, NSW, 2000

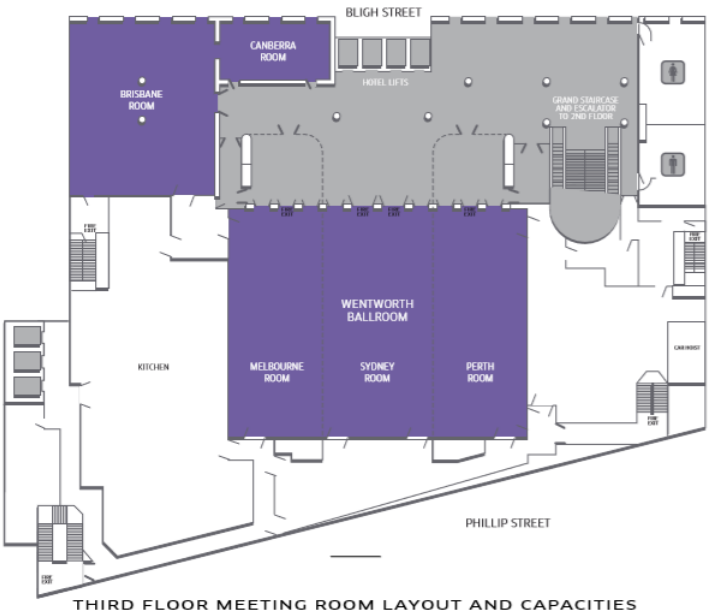
Internal Maps for Conference presentation rooms at Sofitel Wentworth:

Second floor: **Hobart rooms** depicted in purple in top right corner of image

Third floor: **Brisbane room** depicted in purple in top left corner of image




SECOND FLOOR MEETING ROOM LAYOUT AND CAPACITIES




THIRD FLOOR MEETING ROOM LAYOUT AND CAPACITIES

# ASPAH WELCOMES DR SHONA HALSON

We are delighted to welcome Conference 2018's Keynote Speaker, Dr. Shona Halson.

Shona was the Senior Recovery Physiologist at the Australian Institute of Sport for 15 years, and is an Associate Editor of the International Journal of Sports Physiology and Performance. She has a PhD in Exercise Physiology and has been involved in conducting research into the areas of recovery, fatigue, sleep and travel. Shona was selected as the Director of the Australian Olympic Committee Recovery Centre for the 2008 Beijing Olympic Games, the 2012 London Olympic Games and the Rio 2016 Olympic Games. She has published numerous peer-reviewed articles and has authored several book chapters on sleep, fatigue and recovery. Her presentation will provide invaluable insight into how performance enhancement and recovery methods that have worked for elite athletes could be applied for performing artists. Shona is currently an Associate Professor in the School of Behavioural and Health Sciences at Australian Catholic University.

SATURDAY, December 1st 2018

| TIME | EVENT | AUTHOR/PRESENTER | ROOM |
|---|---|---|---|
| **0815** | **Registration** | | Brisbane |
| 0845 | Opening address | ASPAH committee | Brisbane |
| 0900 | Keynote address: Recovery and sleep for elite performance | Dr Shona Halson | Brisbane |
| 1000 | *Paper presentations: chaired by Luke Hopper* | | |
| 1000 | Injury management in full and part-time Australian dancers | Dr Amy Vassallo | Brisbane |
| 1015 | Saxophone fitness: Assessing an ergonomic aid in assisting postural control in saxophone players | Dr Matt Styles | Brisbane |
| **1030** | **Morning tea (catered)** | | |
| 1100 | *Paper presentations: chaired by Amy Naumann* | | |
| 1100 | Investigating career making and career transition through the lens of Australia's elite classical singers | Ms Kathleen Connell | Brisbane |
| 1115 | Patterns and prevalence of lower limb hypermobility in Australian professional and pre-professional dancers: is there a correlation with pain and instability? | Dr Cliffton Chan | Brisbane |
| 1130 | Australian Professional Dancers' experience of healthcare | Jillian Descouteaux/Dr Claire Hiller | Brisbane |
| 1145 | Integrating mental health & wellbeing into creating sustainable physical performance work: Some propositions from the field | Mrs Kareena Hodgson | Brisbane |
| 1200 | Physical activity in elite adolescent dancers: A feasibility study | Ms Bronwyn Trevor | Brisbane |
| 1215 | Finding flow: The key to optimal performance | Janet Karin | |
| **1230** | **Lunch (catered)** | | |
| 1250 | ASPAH AGM (for those who wish to attend)<br>*Everyone is welcome – only current ASPAH members can vote* | | Brisbane |
| 1350 | Keynote workshop: Recovery and sleep for elite performance – Practicalities, examples and discussion | Dr Shona Halson | Brisbane |
| **1520** | **Afternoon tea (catered)** | | |
| 1550 | *Paper presentations: chaired by Cliffton Chan* | | |
| 1550 | The development of a wearable sensor system to quantify training volume in ballet | Ms Danica Hendry (Career Development Award) | Brisbane |
| 1610 | Pre-Performance Routines: Are they relevant to Performing Artists? | Ms Sarah Marshall | Brisbane |
| 1620 | The potential relevance of altered muscle activity and fatigue in the development of performance-related musculoskeletal injuries in high string musicians | Mr Dirk Möller | Brisbane |
| 1630 | Injury surveillance in professional orchestral musicians: a formative and process evaluation pilot study | Mr Nathan Kelly | Brisbane |
| 1640 | Workplace hazards at a university music department in Malaysia: The need for effective management of occupational health and safety | Dr Karen Lonsdale | Brisbane |
| 1650 | Violin to the player or player to the violin? - Perceptions on ideal violin ergonomics | Mr Ju-Yang Chi | Brisbane |
| 1700 | Ultrasound evaluation in violinists suffering from chronic neck and shoulder pain | Dr Daniel Chiung Jui Su | Brisbane |
| 1710 | Ephemeral AND embodied virtual education in the performing arts: Explorations in designing and facilitating online training for actor wellbeing | Dr Mark Seton | Brisbane |
| 1720 | Announcements/end of formal proceedings for Day 1 Conference 2018 | ASPAH committee | Brisbane |
| **1900** | **Casual drinks:** We'd love you to join us for an evening at the Sofitel Wentworth (not catered) | | Soirée bar |

## SUNDAY, December 2nd 2018

| TIME | EVENT | AUTHOR/PRESENTER | ROOM |
|---|---|---|---|
| 0700 | **Casual breakfast meet-up:** enjoy conversation and share ideas over breakfast at the Sofitel Wentworth (not catered) | | |
| **0830** | **Registration** | | |
| 0900 | Workshops: 2 options (running concurrently from 0900): | | |
| | • Mentally preparing the athlete and the artist for performance<br>*Chaired by Peta Blevins* | Prof. Gene Moyle | Brisbane |
| | • Assessing joint hypermobility in performing artists: changing your practice for tomorrow<br>*Chaired by Cliffton Chan* | A/Prof. Leslie Nicholson | Hobart |
| **1030** | **Morning tea (catered)** | | |
| 1100 | Paper Presentations: 2 options (running concurrently from 1100):<br>*Dance Stream: chaired by Claire Hiller* | | |
| | • Turnout as a spectrum of joint contributions from the hip, knee, ankle and foot | Dr Luke Hopper | Brisbane |
| | • An exploration of pre-professional dancers' beliefs of the lumbar spine and lumbar spine functional movements | Ms Danica Hendry | Brisbane |
| | • Enhancing recovery in dance: Benefits and challenges of recovery monitoring in vocational dance training | Mrs Peta Blevins | Brisbane |
| | *Music Stream: chaired by Mark Seton* | | |
| | • Health education for secondary school teachers and students: A scoping review | Dr Alison Evans | Hobart |
| | • Development and design of a health literacy self-assessment tool for student musicians | Dr Suzanne Wijsman | Hobart |
| | • Exploring the expedience of a growth mindset intervention for music performance exam candidates | Dr Naomi Halls | Hobart |
| 1130 | Workshops: 2 options (running concurrently from 1130):<br>• Negotiating pain and discomfort through resilience: Resilient Vulnerability©<br>*Chaired by Paul Duff*<br>• Attending to the whole – Training better overall coordination<br>*Chaired by Luke Hopper* | Dr Mark Seton<br><br>Greg Holdaway | Brisbane<br><br>Hobart |
| **1220** | **Lunch (catered)** | | |
| 1310 | Panel Discussion: Australia Psychological Society Special Interest Group | Chaired by Dr Mark Seton | Brisbane |
| 1410 | Presentations & Acknowledgements: President's Speech and ASPAH Conference 2019 | Dr Luke Hopper/ASPAH committee | Brisbane |
| **1430** | **Afternoon tea (catered)** | | |

## Keynote Address

# Recovery and sleep for elite performance

Dr Shona Halson

PhD, School of Behavioural and Health Sciences, Australian Catholic University, Australia

### NEW INSIGHTS

The most up to date recovery techniques (including sleep) that are utilized by elite athletes.

### NEW IMPLICATIONS

Attendees will have an increased understanding of the latest recovery techniques and how these may be relevant for the performing arts.

### KEYWORDS

Monitoring, hydrotherapy, massage, behaviour change

### CONTACT

Dr Shona Halson

**Background:** Maximising the training stimulus and performance output involves carefully planned training, but also the appropriate use of recovery techniques around these training sessions. Importantly, this may reduce the risk of both overtraining and injury/illness. Sleep is considered the best recovery strategy available to athletes and has important roles in physical and mental performance, illness and injury prevention, mood, metabolism and cognitive function.

**Methods:** Recent data on the amount of sleep athletes are obtaining, means to improve sleep and behaviour change strategies will be discussed.

**Main Contribution:** Attendees should come away with an enhanced understanding of the importance of recovery and sleep, recovery methods, environmental and psychological disturbers of sleep, tools to measure sleep and means of enhancing sleep and ultimately performance and wellbeing.

**Conclusions:** This presentation will describe means of enhancing recovery and sleep and how this has been done in an elite athlete population. Relevance to the performing arts, elite performance and mental and physical wellbeing will be highlighted.

## Biography: Dr Shona Halson

Shona Halson is an Associate Professor in the School of Behavioural and Health Sciences at Australian Catholic University. Prior to this she was a Senior Physiologist at the Australian Institute of Sport for 15 years. She has a PhD in Exercise Physiology and has been involved in conducting research into the areas of recovery, fatigue, sleep and travel. She is an Associate Editor of the International Journal of Sports Physiology and Performance. Shona was selected as the Director of the Australian Olympic Committee Recovery Centre for the 2008 Beijing Olympic Games, the 2012 London Olympic Games and the Rio 2016 Olympic Games. She has published numerous peer-reviewed articles and has authored several book chapters on sleep, fatigue and recovery.

## Paper Presentation

# Injury management in full and part-time Australian dancers

Amy Jo Vassallo[1], Evangelos Pappas[2] Emmanuel Stamatakis[3] and Claire Hiller[4]

[1]Faculty of Health Sciences, University of Sydney, NSW, Australia
[2]PhD, Faculty of Health Sciences, University of Sydney, NSW, Australia.
[3]PhD, Charles Perkins Centre, School of Public Health, University of Sydney, NSW, Australia.
[4] PhD, Faculty of Health Sciences, University of Sydney, NSW, Australia

### NEW INSIGHTS

Ongoing communication and connection between the dance healthcare, research and practice sectors is essential to optimise healthcare services for the performance arts. This presentation will propose evidence-based recommendations for this, and ASPAH attendees from all backgrounds will be invited to contribute to this evolving conversation.

### NEW IMPLICATIONS

It is vital for ASPAH members and dance advocates to support community-based clinicians to provide well informed and dancer specific healthcare. Recommendations to achieve this through leveraging existing collaborations in the field will be proposed, as well as directions for future research.

### KEYWORDS

Safe dance, dance injury, health care, collaboration

### CONTACT

Amy Vassallo

**Background**: Research investigating injury in professional dance historically focusses on full-time company-based dancers. However, the Australian independent dance sector is growing. Data are required regarding their injury, rehabilitation and healthcare, particularly in comparison to the more well studied company-based dancer.

**Methods:** Data were collected by a national, cross-sectional survey of independent and company-based dancers in Australia, undertaken in 2016-17. Data were analysed using chi square, two-tailed Fisher's exact tests, independent t-tests, Mann-Whitney U and content analysis of open-ended questions.

**Results**: 89 full and 57 part-time professional dancers completed all injury and management questions. The responding full-time dancers primarily worked in ballet and part-time dancers' style varied. There was a higher prevalence of full-time dancers accessing employer-provided health services for injury management (83.1% vs 36.1%, $p<0.001$), and they were more likely to visit practitioners specialised in dance (74.6% vs 50%, $p=0.001$). Part-time dancers were more likely to pay for treatment out-of-pocket (63.9% vs 23.9%, $p=0.005$) and took longer to see a clinician post injury.

**Conclusions:** These data demonstrate that injured professional dancers seek care from community-based healthcare practitioners, who may not be aware of the latest evidence based treatment for this highly specialised group. These clinicians require support to understand the demands of dance, and different dance styles, in order to build strong relationships, effectively treat injuries and practically advise on return to dance.

### Biography: Amy Vassallo

Amy is an early career researcher with widespread experience in translational and population health research. Her academic background is in medical science, health policy and public health, and she submitted her PhD investigating dance injury epidemiology in early 2018. Amy was the author of the Safe Dance IV national report published in 2017 in collaboration from Ausdance National, as well as several other peer reviewed journal publications relating to dance injury, dance participation, and health benefits of dance. Amy is particularly passionate about injury prevention, promoting dance participation and translating research findings into action.

Paper Presentation

# Saxophone fitness: Assessing an ergonomic aid in assisting postural control in saxophone playing

Dr Matt Styles[1], Dr Luke Hopper[2] and Jessica Watson[3]

[1] Doctor of Musical Arts, The University of Western Australia, Grad Dip Mus, Royal College of Music UK, B Mus (hons) University of Western Australia

[2] PhD, University of Western Australia, Grad Cert in University Teaching, University of Notre Dame, Australia, BSc (hons) University of Western Australia

[3]BSc (Psych), B Creat.Ind., Edith Cowan University, Australia.

## NEW INSIGHTS

Injury history of professional saxophonists and a new approach to safe practice

## NEW IMPLICATIONS

New consideration of ergonomic aids and proactive physical exercise programs that can be developed and used to assist safe music training

## KEYWORDS

Injury, music, back pain

## CONTACT

Dr Matt Styles

**Background:** Saxophonists are susceptible to injuries as they undertake hundreds of hours of practice, rehearsals, teaching and performance, potentially resulting in muscular 'overuse' dysfunction. This paper describes two case studies of saxophonists, their experience of playing related musculoskeletal disorders and the subsequent development of an ergonomic aid in assisting postural control in saxophone playing.

**Methods:** Both case studies are professional saxophonists who experienced debilitating injuries that significantly limited playing ability. These case studies were documented through observation and medical assistance with medical and allied health professionals. Biomechanical motion capture analyses including electromyography of the erector spinae were performed to assess the effects of the device on posture in saxophonists.

**Results:** No noticeable changes in the saxophonists' posture were identified in the motion capture analyses, despite highly positive feedback from the participants regarding the comfort and utility of the device. The initial motion capture analysis showed little change in posture. The second capturing stage then combined motion capture with electromyography, hypothesising that increased muscle activation in the thoracic and lumbar regions without the use of the ergonomic device would be observed.

**Conclusions:** There is a clear need for future investigation into safe playing practices for saxophonists. Despite a lack of postural change when using the ergonomic aid, the aid has the potential to significantly reduce biomechanical loading on the player.

### Biography: Dr Matt Styles

Holding a Bachelor's Degree in Music (performance/education/orchestration, saxophone and flute), a Post Graduate Diploma (Royal College of Music) and a Doctor of Musical Arts (UWA), this Churchill Fellow (2004) is currently lecturing at the Western Australian Academy of Performing Arts. His versatility has seen him perform with Diana Ross, Hugh Jackman, Dave Weckl and The Manhattan Transfer, at the Villa Cellimontana International Jazz Festival (Rome) and Nine Gates Beijing International Jazz festival. Further, the Western Australian Symphony and Malaysian Philharmonic Orchestra's utilise Matthew as their principal saxophonist and has performed with virtuoso saxophonists Otis Murphy, Jean-Pierre Baraglioli and Rob Buckland. Performer, lecturer, arranger and composer describe this musician in his various roles in the industry.

Since becoming afflicted by a debilitating muscular dysfunction in his saxophone embouchure, neck, back and forearms in 2008, Styles has been working with health professionals to find solutions to this condition. Since implementing holistic management regimes, an increasing number of saxophonists have revealed their injuries to Styles, underpinned by a lack of established information in the area of injury prevention and rehabilitation for saxophonists. It is hoped that following this study into the ergonomic stand, a 'saxophone fitness program' can be developed bringing together biomechanics, physiotherapy, sports science and psychology.

## Paper Presentation

# Investigating performance career making and career transition through the lens of Australia's elite classical singers

Kathleen Connell

BA, DipEd, MA, PhD Candidate. Griffith University; ANATS. Australia

### NEW INSIGHTS

Acknowledgment of the trauma of career disruption for professional singers. Identity formation, and issues of well-being for artists.

### NEW IMPLICATIONS

Lifelong learning to sustain careers for singers and other performance artists is urgently needed.

### KEYWORDS

Careers, singers, transition, wellbeing, creativity, learning

### CONTACT

Kathleen Connell

**Background:** Investigations pertaining to career trajectories and vocational identities of professional classical Australian singers are unchartered and lack specific empirical evidence. Rarely do studies explain singer's experiences and the processes they undertook to reach goals, to comprehend their deep identification with the craft, and acknowledge the specific market conditions which drive their career.

**Methods:** Extensive interviews were conducted with thirteen retired professional singers' and the subsequent thematic analysis found a trajectory of development and decline. As literature which examines similar considerations for sports persons, dancers and actors was interrogated, a corresponding application to the singers' narratives found issues, such as the precursory situation, trauma from involuntary career loss, support or lack of it for transition, and how the singers' moved on to new career directions. The analysis found evidence for a typology of 5 career stages - 1) pre career; 2) breaking in; 3) peak stage; 4) denouement; and 5) moving on.

**Results:** The study found there is a critical link between pre and post career stages that has implications for training, which currently tends to emphasise technical facility rather than lifelong learning and skills that support careers.

**Conclusions:** Newer initiatives for training singers will be explored which encourage and develop a capacity for medium and long term career planning and skills which support creativity, including pedagogical, business, technology and marketing skills.

## Biography

Kathleen Connell is a Music Pedagogy professional and holds a Masters in Vocal Pedagogy from Western Sydney University. Her private teaching practice in Sydney, Australia, trains singers across a variety of genres. She is a PhD candidate at Griffith University, Brisbane and is a contributing author in *Geographies of Creativity*. Her diverse professional performance career, as a singer in both permanent and freelance roles, encompasses a range of styles, events and media.

## Paper Presentation

# Patterns and prevalence of lower limb hypermobility in Australian professional and pre-professional dancers: Is there a correlation with pain and instability?

Katie Thi Kieu Phan[1], Leslie L Nicholson[2], Cliffton Chan[3], and Claire Hiller[3]

[1] BAppSc(Physio)(Hons), Discipline of Physiotherapy, Faculty of Health Sciences, The University of Sydney, Australia
[2]PhD, Discipline of Biomedical Science, Faculty of Medicine and Health, The University of Sydney, Australia
[3]PhD, Discipline of Physiotherapy, Faculty of Health Sciences, The University of Sydney, Australia

### NEW INSIGHTS

This presentation will provide insight into the patterns and prevalence of hip, knee, ankle and foot joint hypermobility, which occur in the lower limb of experienced dancers.

### NEW IMPLICATIONS

The findings from this study could aid in early identification of dancers at risk of lower limb musculoskeletal disorders and subsequent implementation of early management for these dancers.

### KEYWORDS

Ballet, generalised joint hypermobility, dance-related injuries, laxity, instability

### CONTACT

Dr Claire Hiller

**Background:** Lower limb musculoskeletal injuries are common in dancers, hypermobility posing a risk factor for affected joints and the entire kinetic chain. The primary aim of this study was to quantify patterns of lower limb hypermobility in elite dancers and secondarily to evaluate whether joint hypermobility correlated with pain and instability.

**Methods:** The Lower Limb Assessment Score (LLAS) quantified lower limb hypermobility, and dancers completed pain and instability body-charts. A frequency analysis of bilateral hypermobility for each LLAS item and cluster analyses to investigate specific patterns of hypermobility were performed. The relationships between hypermobility, pain and instability, were tested with Chi-Square or Fisher's exact (2-sided) analyses.

**Results:** 57 pre-professional and 29 professional ballet dancers (21±4 years, 64% female, mean 13.7 years training) were recruited. The right leg was more hypermobile than the left for both groups (mean/12(SD): right: 5.00(2.36) and 7.55(1.92); left: 4.82(2.07) and 6.72(1.98) in pre-professionals and professionals respectively). Subtalar pronation (p=0.001) and hip abduction/external rotation (p=0.007) were significantly more hypermobile bilaterally in the professionals. Three main hypermobility profiles on the left and four on the right lower limb were identified by cluster analyses. A significant relation (p=0.04) was found in pre-professionals between right hip hyperflexion and right hip pain. No relationship was found between hypermobility and joint instability.

**Conclusions:** Professional dancers exhibit greater lower limb hypermobility than pre-professional dancers most evident at the hip, subtalar and midfoot joints, with the right leg being more hypermobile in both groups. The significant correlation between right hip hyperflexion and pain in pre-professionals warrants further investigation into possible underlying pathologies and preventative/management strategies. Common lower limb hypermobility profiles identified in elite dancers will be presented.

### Biography: Katie Thi Kieu Phan

Katie is a Physiotherapist who has recently completed her degree at The University of Sydney. She has a strong interest in dance research, and has spent her Honours year undertaking research on joint specific hypermobility in the lower limb of Australian ballet dancers. Through this work, Katie has gained extensive knowledge regarding hypermobility within dancers, and she continues to investigate the implications of this feature within a clinical setting. As she embarks on her career, Katie endeavours to be a clinician who adopts an approach of utilising a plethora of skills and drawing on the most current evidence-based knowledge to treat patients optimally and successfully.

Paper Presentation

# Australian professional dancers' reflections of their healthcare experiences

Jillian Descoteaux[1], Claire Hiller[2] and Christine Suniti Bhat[3]

[1] PhD (August 2018), AT, Ohio University, United States of America
[2]PhD, Faculty of Health Sciences, University of Sydney, Australia.
[3]PhD, LPC, LSC, Ohio University, United States of America.

## NEW INSIGHTS

A system of outreach to freelance dancers needs to be developed in Australia and healthcare professionals interested in helping dancers need to adapt to the genre and workload of the dancer-patient.

## NEW IMPLICATIONS

From having used semi-structured interviews, this research allowed space for dancers to voice their own thoughts and feelings about healthcare, from which scenarios like patterns of being unsupported came through.

## KEYWORDS

Mental health, outreach, physiotherapy, freelance, companied

## CONTACT

Jillian Descoteaux

**Background:** Professional dancers adapt to the limitations of their respective healthcare system. The ways in which they experience healthcare and how they adapt is not well understood. Therefore, the purpose of this study was to describe dancers' experiences of healthcare with attention placed on access and satisfaction.

**Methods**: A narrative inquiry approach was selected to focus on how dancers experience healthcare access and services. Ten contemporary and ballet dancers who self-identified as professional were recruited; four being companied, one retired, and five freelance. Data were collected with semi-structured interviews by a single American Athletic Trainer researcher/interviewer. Interview transcripts were coded using MAXQDA and themes were pulled from coded patterns after which interpretations were member-checked by the participants.

**Results:** Emergent themes included a general appreciation of complementary and alternative practices, a desire to learn about the body, mental health (depression, anxiety, and eating disorders), and a discrepancy between the experiences of professional and freelance dancers. Specifically, freelance dancers reported having difficulty finding a physiotherapist who they felt could manage their needs which was attributed to dance-specific physiotherapists working mainly with large companies and have difficulty adapting their treatment plan for non-companied dancers' needs.

**Conclusions:** Healthcare professionals are able to bridge the gap between dancers' health needs and actual services received. Through efficient marketing, collaboration, and patient education, healthcare professionals can provide appropriate healthcare services tailored to specific dancer populations.

## Biography: Jill Descoteaux

Jill Descoteaux is a recent doctoral graduate of Ohio University having studied Athletic Training and Professional Counseling. She is a Board Member of the International Association of Dance Medicine and Science and a practicing licensed Athletic Trainer in Colorado, United States. She earned her Master of Science in Dance Science from Trinity Laban Conservatorie of Music and Dance in London. Jill's dissertation work examined the experiences professional dancers had with accessing healthcare and interacting with healthcare professionals; her Australian work was supported by the University of Sydney where she worked within the Dance Research Collaborative.

Paper Presentation

# Integrating mental health & wellbeing into creating sustainable physical performance work: Some propositions from the field

Mike Finch, Kareena Hodgson[2]

[1] B.A. (Communications- Theatre/Media), Charles Sturt University, Bathurst, Australia
[2] B.A (Counselling and Coaching). Australian College of Applied Psychology, Australia Health, NSW, Australia.

## NEW INSIGHTS

New ways of exploring the impact of Group Dynamic and individual wellbeing on the outcomes of devised theatre/circus. Investigations of the correlation between mental wellbeing, mindfulness, self-awareness and personal responsibility on the quality and sustainability of devised and physical performance. Potential incorporations of mental health techniques to match the current focus on physical excellence.

## NEW IMPLICATIONS

The possibility of developing collaborations to present a syllabus to performing arts organisations and training institutions. Aimed at improving mindfulness and wellbeing to upgrade the employability, creativity and sustainability of emerging and mid-career physical and devising performing artists.

## KEYWORDS

Mindfulness, self-care, bracketing, circus, devised, theatre

## CONTACT

Mike Finch
Kareena Hodgson

**Background:** Devised performance is inherently a process of self-reveal, fundamentally affected by the mental health and resilience of all participants. To achieve excellence, it's crucial that each member of the team is able to work functionally, creatively, positively and with sustainable energy. The entire content of the work can be fundamentally changed by even one person bringing their personal struggles into the room.

**Methods**: This is not a conventional scientific or clinical study, rather it is a reflective practise based on our 37 combined years of immersive Circus observation. Combined with Kareena's further professional experience as a life-coach & counsellor gathering qualitative data about the lived experience of professional physical performers. We have identified common themes including the challenges of isolation, touring, moving in and out of a 'normal' life, maintaining meaningful long-term relationships, grief, family milestones, heartache, career-threatening injury and other health issues. Techniques we are considering include 'Bracketing', Mindfulness', 'Motivational Interviewing' and 'Strength-focused modalities'.

**Main Contribution:** From the perspective of a devising director the entire team are creating the work collaboratively. Their individual functionality in the room is crucial.

From the perspective of a therapist, especially one with a rich background as a devising performer, the challenge focuses on helping individuals bracket elements of their lived experience, while identifying their strengths to attain workplace functionality.

**Conclusions:** We have not yet reached a conclusion, but are considering various possibilities including a more formal study further to potentially development of a curriculum.

## Biography:

Mike Finch, B.A. (Communications- Theatre/Media) co-founded Precarious and Circus Monoxide, touring Australia in show based on a double-decker bus. In 1997, at age 27, Mike was appointed Artistic Director and co-CEO of Circus Oz, Australia's premier contemporary circus, a role he held for over 17 years. During his term, he was responsible for the process of creating all of Circus Oz's performance work using collaborative devising. Circus Oz tour annually across Australia and the world, from Arnhem Land to 42nd Street New York, and many places in between. He is now a freelance director and consultant.

Kareena Hodgson, B.A (Counselling and Coaching) is a qualified and accredited life coach and counsellor. Kareena was a full-time professional international circus performer for 17 years, including touring the world with Circus Oz before starting a new career as a life coach and counsellor. One area of her practice is to work with performing artists. Kareena's experience as a mother, partner, daughter, sister, performer and producer means she has a deep understanding of the multiple roles people play and the need for reinvention throughout their lives. Kareena's experiences provide many of the metaphors and analogies that underpin her practise.

Paper Presentation

# Physical activity in elite adolescent dancers: A feasibility study

Bronwyn L. Trevor[1], Amy Jo Vassallo[2], Elizabeth J. Nightingale[2], Evangelos Pappas[2], Claire E. Hiller[2]

[1] BAppSc, Faculty of Health Sciences, The University of Sydney, NSW, Australia.
[2] PhD, Faculty of Health Sciences, The University of Sydney, NSW, Australia.

## NEW INSIGHTS

This study is the first known to report on the feasibility of daily physical activity monitoring in a sample of elite adolescent dancers.

## NEW IMPLICATIONS

The study design can be used for a larger scale investigation into the effect of physical fatigue on injury levels in elite adolescent dancers.

## KEYWORDS

Accelerometers, adolescent, dancing, feasibility studies, physical activity

## CONTACT

Bronwyn Trevor

**Background:** Elevated physical activity (PA) levels among elite adolescent dancers has been proposed as a significant risk factor for fatigue and injury. Accurate measurement of PA is critical for determining training volumes to evaluate the health risks. The aim of this study was to investigate the feasibility of measuring daily PA levels in elite adolescent dancers.
**Methods:** Participants were 20 adolescents enrolled in secondary school and attending dance programs at least eight hours per week. PA was monitored using two accelerometer models and wear positions in a crossover trial. Participants were instructed to wear each accelerometer for seven consecutive days and keep a PA diary. An acceptability survey was administered at the end of the week, before monitoring was repeated with the alternate accelerometer. Feasibility was investigated with regards to recruitment rate, compliance and completeness of data collection, and participant acceptability.
**Results:** The recruitment rate for consent and participation was 62.5%. The compliance and completeness of data collection was 95%. There was no discernible preference for one model over the other evident from participants' self-rated acceptability. An overall daily mean 155 minutes spent in moderate-to-vigorous physical activity (MVPA) was calculated from the data, of which there was no relationship established with respect to perceived fatigue.
**Conclusions:** Both accelerometer models and the study design are considered feasible for future studies measuring PA in elite adolescent dancers.

## Biography: Bronwyn Trevor

The presenting author conducted this study as part of an Honours research project in Physiotherapy at the University of Sydney. Formerly a professional ballet dancer, she is now working as a physiotherapist.

## Paper Presentation

# Finding flow: The key to optimal performance

Janet Karin[1]

[1]Grad.Cert, UCRISE, University of Canberra, Australia.

### MAIN CONTRIBUTION

Stress, anxiety, and physical tension can cause performers to "overthink" their actions, thereby increasing muscle tension, reducing coordination, and increasing risk of injury. By contrast, understanding factors that facilitate the emergence of flow can help performing artists in performance preparation and teachers in evolving flow-supportive training methods.

### KEYWORDS

Performance anxiety, stress, "in the zone", harmony, enjoyment

### CONTACT

Janet Karin

**Background:** "Flow", also known as being "in the zone", is a state of inner clarity, effortless control, and total immersion in an activity. Flow creates harmony between intention and motor control, resulting in optimal performance from physical, technical and expressive perspectives. Although the flow state emerges without conscious control, a performer can create ideal circumstances for this euphoric experience to arise.

**Methods:** Mihaly Csikszentmihaly (1992, 1997, 2014) formulated theories underpinning current understanding of flow in the arts, sport, and other endeavours. He described the characteristics of flow and factors that can help trigger this performance-enhancing state. Subsequent authors, notably Abraham Maslow (1994), Bettina Bläsing (2012) and Susan A. Jackson (2013), have examined Csikszentmihaly's theories in the light of psychology, philosophy and motor control.

**Conclusion:** A range of studies have researched the flow state in music, dance, writing, poetry, athletics, and many sports. The consensus is that being "in the zone" allows the performer to transcend normal achievement and to experience extreme enjoyment, even euphoria, during performance.

## Biography: Janet Karin

Janet Karin is an independent researcher, author and presenter, specialising in implicit motor learning, sensori-kinetic imagery and other somatic approaches to dance teaching and learning. Formerly a Principal Dancer of The Australian Ballet, Janet trained many outstanding dancers and teachers while developing dance studies courses for secondary schools and the Australian National University in Canberra, and facilitating a range of international courses, conferences and workshops. She was Kinetic Educator at The Australian Ballet School (2001-2016).

Janet served on the Australia Council Dance Committee and chaired the host consortium for the 2007 International Association for Dance Medicine & Science (IADMS) conference in Australia. After serving as IADMS Education Committee Chair and a Board Director, Ms Karin was elected IADMS President (2013-2015). She is now a member of the National Committee of the Australian Society for Performing Arts Healthcare (ASPAH). Janet has been appointed a Professional Associate of the University of Canberra, and an Industry Mentor in dance for the Queensland University of Technology. Her awards include the Medal of the Order of Australia, the 2014 Australian Dance Award for Services to Dance Education, and the IADMS Dance Educator Award for 2015.

# Workshop
# Recovery and sleep for elite performance

Shona Halson

PhD, School of Behavioural and Health Sciences, Australian Catholic University, Australia

## NEW INSIGHTS
This workshop will provide practical knowledge and an ability to discuss specific strategies that can be implemented by the practitioner.

## NEW IMPLICATIONS
Attendees will be involved in an interactive session where techniques and strategies used by elite athletes will be discussed as well as how to translate these into practice.

## KEYWORDS
Hydrotherapy, massage, behaviour change, sleep habits

## CONTACT
Shona Halson

**Background:** This session will involve the provision of real-world examples, discuss practicalities in specific environments and generate discussion around how to enhance recovery and sleep.

**Main Contribution:** Tools to assess sleep, indicators to be observant of and practical ways of enhancing sleep will be discussed. Specific protocols and timings for recovery strategies will also be provided.

**Conclusions:** This workshop aims to arm attendees with practical knowledge to translate recovery and sleep strategies used by athletes, for their specific population.

## Biography

Shona Halson is an Associate Professor in the School of Behavioural and Health Sciences at Australian Catholic University. Prior to this she was a Senior Physiologist at the Australian Institute of Sport for 15 years. She has a PhD in Exercise Physiology and has been involved in conducting research into the areas of recovery, fatigue, sleep and travel. She is an Associate Editor of the International Journal of Sports Physiology and Performance

Shona was selected as the Director of the Australian Olympic Committee Recovery Centre for the 2008 Beijing Olympic Games, the 2012 London Olympic Games and the Rio 2016 Olympic Games. She has published numerous peer-reviewed articles and has authored several book chapters on sleep, fatigue and recovery.

## Paper Presentation

# The development of a wearable sensor system to quantify training volume in ballet

Danica Hendry[1], Prof. Leon Straker[2], Dr Luke Hopper[3], Prof Peter O'Sullivan[2], Prof Tele Tan[2], Dr Kevin Chai[2], Dr Amity Campbell[2]

[1] PhD Candidate, MSc (Sports Physio), Curtin University, Australia
[2] PhD, Curtin University, Australia
[3]PhD, Western Australian Academy of Performing Arts, Australia

### NEW INSIGHTS

The development of this wearable sensor set provides an exciting opportunity for future research surrounding dancers training loads and volumes. Currently there is a large focus within the sporting literature on the importance of training load management, and the development of this system will allow for similar research and clinical applications to be applied within the scope of dance.

### NEW IMPLICATIONS

The use of machine learning and artificial intelligence within the space of dance. The use of wearable sensors and how they can be utilized within the performance health care setting.

### KEYWORDS

Wearable sensors, technology, training volume, load management

### CONTACT

Danica Hendry

**Background:** To quantify training volume in ballet, researchers and clinicians currently rely on imprecise measures such as schedules and activity diaries. Within team sports, training volume is commonly measured using wearable sensor devices. The aim of this study was to develop a wearable sensor system to accurately identify specific dance movement tasks (jumping and lifting the leg), allowing for objective quantification of training volume.

**Methods:** Pre-professional female dancers (n=23) were fitted with 6 Actigraph Link wearable sensors (100Hz). Dancers performed a series of commonly performed discrete movement tasks; jumping and leg lifting tasks. Movements were then performed within choreographed sequences. Dancers' movements were simultaneously videoed (100 fps), with tasks subsequently identified and classified at 3 levels by a ballet expert. A deep learning approach was used to develop a machine learning algorithm to correctly identify each movement.

**Results:** The wearable sensor system developed was able to detect jumping tasks and leg lifting tasks with 90% accuracy at the first level of classification. At the second level of classification the wearable sensor set performed with 86% accuracy. At the third level of classification the wearable sensor set performed with 83% accuracy.

**Conclusions:** The wearable sensor system allows for objective, accurate and detailed quantification of training volume considering specific movement tasks, providing important implications for dancer health and physical well-being, as well as performance implications.

### Biography: Danica Hendry

Stemming from a career as a professional dancer, Danica is a sports physiotherapist with a keen interest in the health and well being of dancers. She works clinically with dancers and performers from a recreational to elite level, and is a touring physiotherapist with The Australian Ballet. Danica has also been the resident physiotherapist on a number of musical theatre productions including *Matilda The Musical* and *The Rocky Horror Show.* Danica is currently completing her PhD, exploring the contributing factors towards pain related disability in pre-professional dancers.

## Paper Presentation

# Pre-Performance routines: Are they relevant to performing artists?

Sarah Marshall[1]

[1] Bachelor Music with double major in Psychology, Faculty of Arts, University of New South Wales
Master of Music Performance, Sydney Conservatorium of Music, Sydney University
Master of Counselling (currently enrolled), School of Health, University of New England

### NEW INSIGHTS
Improved knowledge around PPR and its benefits for the performing arts.

### NEW IMPLICATIONS
What further PPR research needs to be carried out to create meaningful, impactful training for performing artists.

### KEYWORDS
Pre-performance routines, performance anxiety, mental preparation

### CONTACT
Sarah Marshall

**Background:** There has been extensive research on the benefits of pre-performance routines (PPR) in assisting athletes with self-regulation of arousal, attentional focus and performance expectancy. Little is known, however, about the use and effectiveness of PPR's in the performing arts, despite the fact that performance anxiety can have debilitating effects on performing artists and is acknowledged as a major health risk for these professionals.

A systematic review of the literature will be undertaken and completed by 8th October 2018, to critically evaluate the effectiveness of pre-performance routines for individuals engaged in artistic performance.

**Method**: Using PRISMA guidelines, a systematic literature review will identify published, English-language evaluations of pre-performance routines 2006 to 2018 to examine their effectiveness for performing artists.

**Main Contribution:** The current status of research into the effectiveness of arts-based PPR will be examined including existing contributions and findings with the aim to identify 'gaps' in the literature, and recommendations to make PPR training facilitative for superior artistic performance.

**Conclusion:** PPR's have been found to assist athletes with critical elements for successful self-paced performance including their self-regulation of arousal, attentional focus and performance expectancy. These elements are also critical for high calibre artistic performance. Improved PPR training could assist artists to perform closer to their peak and reduce the associated stress and anxiety.

### Biography: Sarah Marshall

Sarah uses her tertiary training in Psychology and Counselling to assist performing artists in pre-performance preparation and to flourish both on and offstage.

Sarah has performed as a soloist for Opera Queensland, Queensland Symphony Orchestra and the ACO. She is an experienced adjudicator and competition judge including the National Eisteddfod in Canberra and numerous regional competitions. She also works as an AMEB Singing and Music Theatre Examiner.

Past students have gained entrance and scholarships to Brisbane, Melbourne and Sydney Conservatoriums Performance Programs, NIDA's Music Theatre Program, WAAPA and the Berklee College of Music in Boston, others have gained principal roles with Opera Australia and recording contracts with BMG and Warner.

Paper Presentation

# The potential relevance of altered muscle activity and fatigue in the development of performance-related musculoskeletal injuries in high string musicians

Dirk Möller[1], Nikolaus Ballenberger[2], Bronwen Ackermann[3] and Christoff Zalpour[4]

[1] Dipl.-Sportwiss./PT, Faculty of Business Management and Social Sciences, Osnabrueck University of Applied Sciences, Germany
[2] Prof. PT, Faculty of Business Management and Social Sciences, Osnabrueck University of Applied Sciences, Germany
[3] Assoc. Prof. PT, Faculty of Medicine and Health, The University of Sydney, Australia
[4] Prof. PT, Faculty of Business Management and Social Sciences, Osnabrueck University of Applied Sciences, Germany

## NEW INSIGHTS

Based on these results it may be possible to identify compensatory or less effective motor strategies used to maintain performance.

## NEW IMPLICATIONS

Recognising aberrant muscle activities, and if such muscle activities are correlated with less efficient muscle activation patterns, may help in developing targeted PRMD prevention and management strategies

## KEYWORDS

PRMD, electromyography, muscle activity, muscle fatigue, high string musicians

## CONTACT

Dirk Möller

**Background:** Muscle fatigue has been reported as a risk factor for the development of performance-related musculoskeletal disorders (PRMD) in musicians. However, little research exists to support this claim. The aim of this study was to investigate whether changes occur in muscle activity patterns during high string performance over a prolonged playing period, and whether this is influenced by PRMD.

**Methods:** High string musicians were divided into a PRMD and a non-PRMD group. They played a chromatic scale pre and post and a self-chosen "hard" (Borg scale 16-17) piece of music for one hour. Electromyography data recorded from arm, shoulder and trunk muscles was analyzed: the amplitude to measure muscle activity characteristics and the lower frequency to measure muscle fatigue. Differences between and within groups and the frequency spectrum were analyzed using linear mixed models.

**Results:** Fifteen musicians participated (7 PRMD: 22.8 years, 2 male/5 female and 8 non-PRMD: 34.3 years, 2 male/6 female). Changes in muscle activation patterns were observed between and within both groups, however changes varied significantly depending on group affiliation. Significant low frequency spectrum changes between groups were observed in overall muscles of the right arm ($p=0.04$) and left forearm flexors ($p=0.05$) following one hour of playing.

**Conclusions:** Muscle activity and frequency spectrum shifts differ in high string musicians with and without PRMD, suggesting possible differential muscle fatigue effects between the groups.

## Biography: Dirk Möller

Dirk Möller (born 06/13/70) has a degree in sport sciences (Dipl.-Sportwiss.) and physiotherapy with advanced skills in manual therapy (International Federation of Orthopaedic Manipulative Physical Therapists, IFOMPT) and medical exercise therapy. He has worked for a long time in several physiotherapy practices and rehabilitation hospitals. Since 2012, his focus has moved to Osnabrueck University of Applied Sciences. He works as a lecturer in several study programs for physiotherapists and musicians. Since his time at the University he is one of the heads of the physiotherapeutic MotionLab and a member of the interdisciplinary research team focussing on musicians´ health. He is PhD candidate, his topic is muscle activity in conjunction with the development of playing-related musculoskeletal disorders.

His area of interests includes musicians´ health from physiotherapeutic perspective, applied biomechanics (especially electromyography and motion capture), human movement studies and the combination of manual therapy and sports science.

Paper Presentation

# Injury surveillance in professional orchestral musicians: a formative and process evaluation pilot study.

Mr Nathan Kelly[1], Associate Professor Bronwen Ackermann[2], Dr. Mark Halaki[3] and Professor Tim Driscoll[4]

[1] BA Health Science (hons), University of Sydney, Australia
[2] PhD, MPH, BAppSc(phty), University of Sydney, Australia
[3]PhD, University of Sydney, Australia
[4]PhD, MBBS Occupational Physician, University of Sydney, Australia

## NEW INSIGHTS

As one of the earliest examples of attempting injury surveillance with orchestral musicians the presentation will provide insight into whether injury surveillance tools may be useful in this population, and suggestions as to how they may be better implemented.

## NEW IMPLICATIONS

Injury prevention is the cornerstone of effective injury management, and understanding the science and rationale behind gold standard injury prevention methods (injury surveillance) will benefit both clinicians and educators.

## KEYWORDS

Musician, injury surveillance, process, formative, evaluation

## CONTACT

Bronwen Ackermann

**Background:** Surveys over the previous 30 years show professional orchestral musicians experience extremely high rates of injury globally. However, a lack of prospective research means little is known regarding injury causation. In sports medicine, injury surveillance systems have been effective in prospectively tracking risk factors and subsequent injury occurrence to determine injury causation. For this reason, a web-based injury surveillance system, the Musicians Wellness Project (MWP), was previously designed however required pilot testing

**Methods:** Combined formative and process evaluation methods were used to collect and analyse quantitative and qualitative data evaluating the efficacy and functionality of the MWP. An MWP website allowed participants to self-provide multiple survey entries detailing practice/performance workload, psychological health, and the occurrence/ongoing impact of performance related musculoskeletal disorders (PRMDs).

**Results:** Two trials of the MWP were conducted with one Australian professional symphony orchestra. In the first trial, only 2 of a total 8 participants commenced the trial citing website functionality as a key issue. Following modifications, including financial reimbursement, a second implementation was conducted with 6 of a total 9 participants completing the 4-week trial. Feedback indicated increased compliance; however, satisfaction and engagement were still negatively affected by website functionality and ambiguous survey terminology.

**Conclusions:** The MWP system may be utilised in the professional orchestral musician population, but requires further consideration to address issues impacting compliance, satisfaction and engagement, and may require greater organisational support.

## Biography: Nathan Kelly

Nathan Kelly completed his Bachelor of Health Sciences (honours) with the University of Sydney in 2017 and has since moved on to studying a Masters of Physiotherapy with hopes of specialising in performing arts healthcare. His passion for this field stems from his own playing of instruments from an early age. His honours thesis focused on understanding how injury develops in orchestral musicians through the adaption of a common and successful tool in sports and occupational medicine, injury surveillance.

## Paper Presentation

# Workplace hazards at a university music department in Malaysia: The need for effective management of occupational health and safety

Dr Karen Anne Lonsdale[1]

[1] DMA, Faculty of Music and Performing Arts, Sultan Idris Education University, Malaysia

### NEW INSIGHTS

Progress made and obstacles faced in implementing musicians' healthy and safety practices at a university in Malaysia.

### NEW IMPLICATIONS

This presentation will highlight pportunities for further research on musicians' health in Malaysia

### KEYWORDS

Occupational health and safety (OHS), music performance, music education, risk management

### CONTACT

Karen Lonsdale

**Background:** While the Malaysian government has legislation in place to create safe and healthy workplace environments, musicians' health is evidently not yet a priority. This paper will highlight typical workplace hazards, and the obstacles faced by a university lecturer, when endeavouring to create an awareness of workplace health and safety for musicians.

**Methods:** An auto-ethnographical account describing the work-related experiences of a university lecturer in Malaysia. Observations were collected over a 6-year period during normal work activities such as presenting lectures, directing rehearsals, and attending concerts. These experiences will be contextualized within the existing literature on musicians' health and safety, as well as cultural and religious considerations.

**Main Contribution:** Obstacles encountered included lack of regulated rehearsal times, extended work hours, environmental factors such as mould, dust, exposed cables, and unrepaired damage in practice rooms, as well as a lack of injury prevention strategies. Certain cultural and religious factors are important to this discussion, as scheduling of classes and assessments must work around religious commitments and festivals.

**Conclusions:** Research in the area of musicians' health is limited, with only a few studies having been undertaken. Many risk factors need to be addressed in this Malaysian university, including noise exposure, physical overuse, environmental hazards, stress, practice habits and teaching methods.

## Biography: Karen Lonsdale

Karen Lonsdale holds a Bachelor of Music (1988) and Graduate Diploma of Music (1989) from the Queensland Conservatorium of Music, Meisterklassendiplom (1992) from the Hochschule für Musik in Munich, and a Doctor of Musical Arts from Griffith University (2011). She has performed as a flautist with the Queensland Symphony Orchestra, Queensland Philharmonic Orchestra, Sydney Symphony, Australian Opera and Ballet Orchestra, Tasmanian Symphony, Munich Symphony, Queensland Pops Orchestra, Willoughby Symphony, Camerata and X-Collective Cabaret Ensemble. She has adjudicated at the Sultan Idris National Wind Orchestra Festival, Festival Orkestra Pop Patriotisme Kebangsaan, Finale Wind Orchestra, Malaysia International Music Arts Festival, the Australian National Band Championships, as well as various Australian eisteddfods. She has presented research papers at the Australian Flute Festival; Australian Society for Performing Arts Healthcare Conference; National Flute Association Convention, Performing Arts Medicine Symposium (USA), University of Cambridge (UK), and the Asia Pacific Symposium for Music Education Research. In 2018, she performed at the BrisAsia Festival, Russian Centre for Science and Culture in Kuala Lumpur, and was a Gold medal winner at the International Invention, Innovation & Technology Exhibition (ITEX 2018), Malaysia for a series of flute scores that she developed.

Dr Karen Lonsdale held the position of Senior Lecturer at the Faculty of Music and Performing Arts, Universiti Pendidikan Sultan Idris (UPSI) from 2012-2018.

## Paper Presentation

# Violin to the player or player to the violin? – Perceptions on ideal violin ergonomics

Ju Yang Chi [1], Mark Halaki[2], Margaret Barrett [3], and Bronwen Ackermann[4]

[1] PhD student, MPT, PT, University of Sydney, NSW, Australia
[2] PhD, MSc (Biomed Eng), BSc (Mech Eng), University of Sydney, NSW Australia
[3]PhD, MEd, B.A., University of Queensland, QLD, Australia.
[4] PhD, MPH, BAppSc.(Physio), University of Sydney, NSW, Australia.

### NEW INSIGHTS

Violin support involves the complexity among the physical characteristics, shoulder rest and chin rest. Other factors such as the techniques, influence of teacher, budgets and psychosocial behaviours also impose critically to the violinists when they're doing instrument fitting.

### NEW IMPLICATIONS

Guides for violinists, violin teachers and health professionals working with violinists when the intervention involves changing the instrument set-up.

### KEYWORDS

Physical characteristics, violin support, shoulder rest, chin rest

### CONTACT

Ju Yang Chi

**Background:** Currently, the use of chin rest and/ or shoulder rest on a violin is mostly based on personal experiences and pedagogical perspectives without the availability of clear guidelines. The aim of the current study is to identify potential factors influencing the violin player and their ergonomic set-up.

**Methods**: 23 semi-structured interviews with violinists, violin teachers, Body Mapping teachers, physical healthcare professionals and violin salespeople were conducted. All interviews were audio recorded, transcribed and anonymised for analysis. Thematic and content analysis was employed to analyse the data. Codes were identified and refined by all four authors and grouped together by categories and subcategories.

**Main Contribution:** The main findings highlight two divergent broad groups in relation to perceptions and approaches to violinist ergonomics. One group of respondents perceived the set-up of the player themselves as the most important factor while others believed the instrument set-up was the priority. Key themes that emerged included (i) approaches to addressing the player or instrument set-up largely reflected the background of the interviewee; (ii) environment and performance outcomes strongly influence ergonomics (iii) only a minority of participants addressed both violin and performer, and (iv) there are possible relationships between pain, stress and violinist ergonomics. The findings illustrate the relationship between knowledge sources, training and experience on the ergonomics of violinists.

### Biography: Ju Yang Chi

Mr. Ju Yang Chi is the PhD candidate in the Discipline of Biomedical Science, The University of Sydney. He received his M.S., Acupuncture Science from China Medical University in 2014 and his B.S. Physiotherapy from National Taiwan University and is interested in musician healthcare with current research focusing on ergonomics for musicians. He presented a review of ergonomics in violin playing and a quantitative research study on hand size in piano playing at the ASPAH conference in 2015 and 2017.

## Paper Presentation

# Ultrasound evaluation in violinists suffering from chronic neck and shoulder pain

Daniel Chiung Jui Su[1] and Willy Chou[2]

[1] MD, Department of Physical Medicine and Rehabilitation, Chi Mei Medical Center, Taiwan
[2] MD, Department of Physical Medicine and Rehabilitation, Chi Mei Medical Center, Taiwan

### NEW INSIGHTS

Allows the performing arts healthcare community to recognise a certain pattern of shoulder and neck injury in violinists through the examination of ultrasound.

### NEW IMPLICATIONS

When treating violinists with chronic neck and shoulder pain, we have to take extra care of the cervical facet joints over C5, C6, C7, left supraspinatus and infraspinatus tendon, right subscapularis tendon and biceps tendon.

### KEYWORDS

Ultrasound, violinists, neck, shoulder, pain

### CONTACT

Willy Chou

**Background:** Violinists often suffer from soreness or pain over the neck and shoulder regions. Correct posture for playing the violin requires neck rotation, left shoulder external rotation, and left forearm supination. There is no previous study evaluating the injury patterns seen in violinists using ultrasound.

**Methods:** A total of 11 professional violinists who suffered from chronic neck and shoulder pain for more than 3 months were recruited and evaluated by ultrasound (Siemens, S3000) over bilateral glenohumeral joints, acromioclavicular joints and cervical facets. At the shoulder, biceps tendon, anterior glenohumeral ligament, pectoralis major and minor, and rotator cuff tendons were examined using ultrasound.

**Results:** In the left shoulder, 8 out of 11 violinists had posterior deltoid strain combined with tendinopathy or tears over the posterior part of the supraspinatus tendon close to the insertion of infraspinatus tendon. In the right shoulder, 5 out of 11 violinists had subscapularis and biceps tendinopathy. In the cervical area, 9 out of 11 violinists had cervical facet arthritis in different degrees especially between C5, C6 and C7 facets.

**Conclusions:** The results of the ultrasound evaluation over the shoulder and neck in the violinists who suffered from chronic shoulder and neck pain revealed a pattern associated with posture during violin playing. After recognising the injury patterns, a protocol in physical therapy combined with regenerative injections may be established.

## Biography: Daniel Chiung Jui Su, MD, RMSK.

Daniel Chiung Jui Su is a physical medicine and rehabilitation doctor, specialising in ultrasound diagnosis and guided injection. He emphasises on regenerative injection, including prolotherapy and platelet-rich-plasma injection. He has played cello since childhood and has regular performances every year. Daniel was also certified by PAMA in 2017, Aspen.

## Paper Presentation

# Ephemeral AND embodied virtual education in the performing arts: Explorations in designing and facilitating online training for actor wellbeing

Dr Mark Seton

[1] PhD, Theatre and Performance Studies, The University of Sydney, Australia

### NEW INSIGHTS

We can learn from experiences of using online communication resources such as Youtube and Skype how to best share new insights and practical tools for promoting self-care and resilience but this transfer of skills needs to be complemented by encouraging self-awareness of other existing commitments that keep them from trying new techniques.

### NEW IMPLICATIONS

Evaluation of the effectiveness of any health-promotion training in performing arts higher education needs to attend to the helps and hindrances that impact students' motivation and discipline to change habits that may prove unhealthy and unsustainable.

### KEYWORDS

Virtual, online, training, actor, wellbeing

### CONTACT

Dr Mark Seton

**Background:** I was approached by Michigan State University to provide foundation training in actor self-care via Skype. This paper draws upon insights from Frank Camilleri (2015) Towards the study of actor training in an age of globalised digital technology, *Theatre, Dance and Performance Training*, 6:1, 16-29. Habituation towards new practices is informed by Robert Kegan & Lisa Lahey (2009*) Immunity to Change: How to Overcome It and Unlock the Potential in Yourself and Your Organization (Leadership for the Common Good)* Boston, MA: Harvard Business Review Press.

**Methods:** The virtual workshop was done on Skype with powerpoint slides and music. I led the students through key principles of my Resilient Vulnerability© practice. I conducted an anonymous post-workshop survey.

**Results:** Only 9 students did complete the survey but responses provided insights into distance training. One spoke of "the importance of taking care of my personal self when tackling a role that requires a lot of emotional energy to be used". However, while students valued the workshop at the time, far fewer found the motivation and self-discipline to put new skills into consistent practice.

**Conclusions:** In considering the implications of what Kegan and Lahey describe as 'immunity to change' I believe there may be beliefs, assumptions or myths that performers hold onto about their identity and core values that unconsciously work against making behavioural changes.

### Biography: Dr Mark Seton

Dr Mark Seton is the director of Sense Connexion www.senseconnexion.com, founder of the Resilient Vulnerabilty © paradigm, and an Honorary Research Associate (Department of Theatre and Performance Studies) at the University of Sydney. He lectures in health for actors at the International Screen Academy and Academy of Film Theatre and Television, and theatre history at Excelsia College. He was the recipient of the 2009 Gilbert Spottiswood Churchill Fellowship and conducted a study tour of actor training healthcare practices in the UK. His research interests include the psychological wellbeing of performing artists and ethical teaching and research practices in Higher Education Creative and Performing Arts. Alongside membership of the Editorial Board of the *Journal of Applied Arts and Health,* Mark is a member of the Executive Committee of the Australian Society for Performing Arts Healthcare, of which he was a founding member.

# SUNDAY 9AM Workshop A

# Mentally preparing the athlete and the artist for performance

Gene Moyle[1]

[1] DPsych(Sport & Exercise), MPsych(Sport & Exercise), PGDipProfPsych, BA(Psych/HMS), BA(Dance)
School of Creative Practice, Creative Industries Faculty, Queensland University of Technology.

## NEW INSIGHTS

The benefits of the application of performance psychology strategies to enhance performance. Through exploring parallels between elite sport and performing arts domains, performing artists and healthcare professionals can increase their understanding of the potential use of performance psychology.

## NEW IMPLICATIONS

Participants will be prompted to consider literature around both the research and the practical application of performance psychology, and be invited to consider their commitment to increasing their own, or their client's, knowledge of this important area in advancing support for performing artists' health and wellbeing.

## KEYWORDS

Performance Psychology, performance enhancement, mental skills.

## CONTACT

Professor Gene Moyle

**Background**: This workshop draws from the presenter's extensive experience in the applied practice and research of performance psychology across both elite sport and performing arts domains.

**Evidence**: Sport and exercise psychology is considered to be one of the fundamental strands in the development of performance psychology, where research has additionally identified many parallels and similarities in its application to other performance domains such as the performing arts (Hays, 2012; Hays & Brown, 2004). This is a growing field, both in terms of the research being conducted and reflections on applied practice in performing arts psychology (Hays, 2002, 2006, 2009, 2012; Hays & Brown, 2004; Moyle, 2012, 2014, 2016, 2018; Nordin-Bates, 2012; Taylor & Estanol, 2015).

**Contributions**: This workshop will explore the strategies that are used in both elite sport and performing arts contexts to assist in enhancing performance. Through a case study approach, effective approaches and frameworks, practitioner learnings, and the latest research within the performance psychology literature will be highlighted to demonstrate the successful application of performance psychology.

**Conclusion:** Parallels between the use of performance psychology in elite sport and the performing arts will be identified, in order to assist increase participant's awareness, understanding, and the potential application of practices that are complementary to both domains.

## Biography: Professor Gene Moyle

Professor Gene Moyle has worked across a dynamic mix of fields including the performing arts, elite sport and the corporate sectors. Following a brief career as a professional ballet dancer, Gene pursued further studies in psychology completing a Masters and Doctorate in Sport and Exercise Psychology, and has focused upon the application of performance psychology and performance enhancement, particularly within the performing arts and elite sport domains. Her involvement in dance has included being a Lecturer in Performance Psychology, a Career Development Advisor for the SCOPE for Artists Programs, a regular contributor to DANCE Australia magazine, the Head of Student Health & Welfare at the Australian Ballet School, in addition to working in private practice with performing arts students, teachers, and professionals. She is currently a Board Member of the Queensland Ballet, a member of the Queensland Board of the Psychology Board of Australia (AHPRA), President of Ausdance National, a Performance Health Advisory Panel member for the Queensland Academy of Sport, and an Industry Mentor and Panel Assessor for Arts Queensland. She joined QUT Creative Industries faculty in the role as Head of Discipline – Dance in November 2012, and was appointed the inaugural Head of School – School of Creative Practice in January 2017.
http://staff.qut.edu.au/staff/moyleg/

# SUNDAY 9AM Workshop B

# Assessing joint hypermobility in performing artists: Changing your practice for tomorrow

Leslie L. Nicholson1[1] and Cliffton Chan[2]

[1] PhD, BAppSc(Physio), Faculty of Medicine and Health, The University of Sydney, Australia
[2] PhD, BPhysio(Hons), Faculty of Medicine and Health, The University of Sydney, Australia

## NEW INSIGHTS

Upper limb joint hypermobility can be quantified and localised using a novel reliable and valid tool.

## NEW IMPLICATIONS

Learning to apply the tool and interpret the information that it provides, will permit attendees to gain valuable objective measures from performers that can be used to direct prevention and management in addition to its use in research.

## KEYWORDS

Measurement, Beighton Score. Upper Limb Hypermobility Tool, Lower Limb Assessment Score

## CONTACT

Assoc Professor Leslie Nicholson

**Background**: Artistic performance requires precise and controlled movement that occurs at joints. What happens when the range is not "normal" but excessive? The sequalae of neuromuscular adaptations are likely to include fatigue, muscle and joint pain and consequent decrement in performance. Hypermobility can be localised or generalised. Traditional methods of measuring generalised joint hypermobility (GJH) are of limited value in the performing arts, as they test limited, often irrelevant joints in one anatomical plane. A multi-joint, multi-planar test is needed for the upper limb to research and address prevention and management of hypermobility-related dysfunction.

**Methods**: The Upper Limb Hypermobility Assessment Tool (ULHAT) was designed based on the Lower Limb Assessment Scale. It comprises 12 dichotomous-choice tests of mobility of the shoulder, elbow, wrist and hand. Normal, likely-hypermobile and known hypermobile (diseased) adults (n=112) were tested to determine reliability (Intraclass Correlation Coefficients), validity (sensitivity and specificity), the cut-point for upper limb hypermobility (median interquartile ranges and ROC Curve analysis) and whether the ULHAT identified GJH (percent agreement with expert clinical opinion).

**Results**: Inter-rater reliability of the tool was high (ICC2,1 = 0.92). The cut-point was ≥7/12 (sensitivity 0.84, specificity 0.77, +LR 3.7, -LR 0.2) and the ULHAT identified GJH (78-88% agreement).

**Conclusions**: As a reliable and valid tool for the identification of upper limb and generalised joint hypermobility, the ULHAT will assist with screening and early identification of possible risk factors for injury and the provision of joint specific measures enabling targeted management.

## Biography: Assoc Professor Leslie Nicholson

Leslie is a titled Musculoskeletal Physiotherapist and Associate Professor in Biomedical Science at the Faculty of Medicine and Health at the University of Sydney where she teaches musculoskeletal anatomy and clinical exercise for physiotherapists. She co-leads the Hypermobility and Performance Laboratory as part of the Bosch Institute at the University of Sydney. She completed her PhD in 2002 and after many years of sports medicine related research, found her niche in the study of hypermobility disorders. She researches pediatric and adult hypermobility which encompasses that found in otherwise healthy performance artists and sports persons to those with the syndromic forms of connective tissue diseases, notably hypermobile Ehlers-Danlos Syndrome and Hypermobility Spectrum Disorder.

## Paper Presentation

# Turnout as a spectrum of joint contributions from the hip, knee, ankle and foot

Luke Hopper[1], Sarah Carter[2], Rebekha Duncan[3], Danica Hendry[4], Leo Ng[5], Catherine Wild[6], Andries Weidemann[7] and Amity Campbell[8]

[1] PhD, Western Australian Academy of Performing Arts, Edith Cowan University, Australia
[2]PhD, School of Allied Health, University of Western Australia, Australia.
[3]B.Physio(Hons), School of Physiotherapy and Exercise Science, Curtin University, Australia.
[4]MSc, School of Physiotherapy and Exercise Science, Curtin University, Australia.
[5]PhD, School of Physiotherapy and Exercise Science, Curtin University, Australia.
[6]PhD, School of Physiotherapy and Exercise Science, Curtin University, Australia.
[7]Western Australian Academy of Performing Arts, Edith Cowan University, Australia
[8]PhD, School of Physiotherapy and Exercise Science, Curtin University, Australia.

### NEW INSIGHTS

Dancers regularly use the knee and foot in achieving turnout.
The contributions of the knee and foot used by dancers to achieve turnout may need to be re-evaluated in the context of injury

### NEW IMPLICATIONS

Lower leg contributions to turnout may be strongly affected by individual anatomical morphology and relatively consistent across levels of turnout range of motion.

### KEYWORDS

Dance, ballet, biomechanics, kinematics, alignment, injury

### CONTACT

Dr Luke Hopper

**Background**: The fundamental act of externally rotating the legs into positions of turnout in ballet is both essential for the ballet aesthetic and controversial in the interests of dancer health and wellbeing. 'Correct' technique in achieving turnout in ballet describes maximal rotation at the hip joint, while limiting rotation from the knee and foot. Contributions to turnout provided by the knee and foot are often associated with risk of lower limb injury. This study evaluated the joint strategies used by dancers to achieve turnout using 3D kinematic analyses.

**Methods:** The joint contributions to turnout were assessed in 23 pre-professional dancers when standing naturally and in three first position turnout conditions; functional, forced and on low friction rotation discs. The contributions of the hip, knee and foot in achieving turnout were assessed across the conditions using a customized 3D motion capture marker set and kinematic model.

**Results:** Significant effects on the hip, knee and foot progression of the dancers were observed across the three conditions. The hip joint contributed less than half of the leg external rotation used by the dancers to achieve turnout in all conditions. The ratios of joint contributions to turnout also remained relatively consistent across conditions.

**Conclusions:** These findings question the presumption that knee and foot contributions to turnout are inherently associated with injury risk in dancers. The knee and foot appear to be substantial contributors in regular functional turnout postures. Knee and foot contributions to turnout may be better considered as a spectrum whereby a safe range of lower leg rotation is acceptable in ballet technique.

### Biography: Dr Luke Hopper

Dr Hopper completed a PhD specialising in the biomechanics of dance and injury prevention at the University of Western Australia's School of Sport Science, Exercise and Health in 2011. Dr Hopper coordinated the biomechanics module in the pioneering Master's of Dance Science at the Trinity Laban Conservatoire of Music and Dance in 2010 before commencing as a lecturer in biomechanics at the University of Notre Dame Australia. Dr Hopper's work in dance science and performing arts health has involved several collaborations with international ballet companies such as the Birmingham Royal Ballet and with industry partners Harlequin Floors. Dr Hopper continues to work with the International Association of Dance Medicine and Science and the Australian Society for Performing Arts Healthcare in the development and dissemination of health evidence in preventing injury and illness in performing artists. In his position at ECU, Dr Hopper is developing a health education and research program for the performing arts using his specialised skills in biomechanical 3D motion capture facilities and in collaboration with the WAAPA staff and students.

Paper Presentation

# An exploration of pre-professional dancers beliefs of the lumbar spine and lumbar spine functional movements

Danica Hendry[1], Prof. Leon Straker[2], Dr Luke Hopper[3], Dr Amity Campbell[2], Rhianna Tunks[4], Prof Peter O'Sullivan[2]

[1] PhD Candidate, MSc (Sports Physio), School of Physiotherapy and Exercise Science, Curtin University, Australia

[2] PhD, Curtin University, Australia

[3]PhD, Western Australian Academy of Performing Arts, Australia

[4]BSc student, Curtin University, Australia

## NEW INSIGHTS

This is the first study to explore the influence of a history of disabling low back pain on the beliefs that dancers hold around movement and movement safety. It will provide insight of the cognitive factors that may contribute towards the development of low back pain, thus assisting with the prevention and treatment of the condition.

## NEW IMPLICATIONS

For physiotherapists, psychologists, dance teachers and dancers alike. Understanding dancers' perceptions around the lumbar spine and movement safety perceptions of the lumbar spine, to understand the multifactorial etiological factors that contribute to pain. Appropriate use of education and language around the lumbar spine within the clinical space and in the dance studio. Understanding dancers' perception of movement safety during spinal movements will help to connect the interplay between physical loading, culture and cognitions on the development of low back pain.

## KEYWORDS

Lower back pain, cognitions, movement safety

## CONTACT

Danica Hendry

**Background:** Low back pain (LBP) in dancers is common and a biopsychosocial model should be considered in the aetiology of the condition, including a dancer's beliefs around movement and their spine. This study aimed to determine if pre-professional dancers' beliefs about their lower back and movements of the spine were influenced by a history of disabling LBP.

**Methods:** Pre-professional female dancers (n=52, mean age 18.3 [SD=1.4] years) were recruited, and reported whether they had a history of disabling LBP and completed the Back Pain Attitudes Questionnaire (Back-PAQ) and a functional dance spinal movement safety questionnaire. A linear mixed model was applied, to determine the effect of a history of disabling LBP on dancers' beliefs ($p<0.05$).

**Results:** Twenty dancers reported a history of disabling LBP. A history of disabling LBP had no effect on Back-PAQ scores ($p=0.130$) or on dancers perceived movement safety of all tasks ($p=0.867$). Considered independent of a history of disabling LBP, a statistically significant main effect was demonstrated across all movement tasks ($p<0.001$), post-hoc comparison revealed dancers perceived a lumbar spine flexion-based task as safest and a lumbar spine extension-based task as most dangerous.

**Conclusions:** The beliefs that dancers hold about their back appear to be influenced by the culture of dance as opposed to their history of disabling LBP. Interestingly, different to other populations, dancers perceived extension based movements as more dangerous than flexion based movements.

## Biography: Danica Hendry

Stemming from a career as a professional dancer, Danica is a sports physiotherapist with a keen interest in the health and wellbeing of dancers. She works clinically with dancers and performers from a recreational to elite level, and is a touring physiotherapist with The Australian Ballet. Danica has also been the resident physiotherapist on a number of musical theatre productions including *Matilda The Musical* and *The Rocky Horror Show.* Danica is currently completing her PhD, exploring the contributing factors towards pain related disability in pre-professional dancers.

## Paper Presentation

# Enhancing recovery in dance: Benefits and challenges of recovery monitoring in vocational dance training

Peta Blevins[1], Gene Moyle[2], Shona Erskine[3] and Luke Hopper[4]

[1] MSc, Western Australian Academy of Performing Arts, Edith Cowan University, Australia
[2]DPsych, Creative Industries Faculty, School of Creative Practice, Queensland University of Technology, Australia.
[3]PhD, Western Australian Academy of Performing Arts, Edith Cowan University, Australia
[4]PhD, Western Australian Academy of Performing Arts, Edith Cowan University, Australia.

### NEW INSIGHTS

The importance of recovery within elite level dance training and the use of recovery monitoring and mindfulness training to enhance performance in the performing arts. The potential challenges to introducing recovery practices within dance training environments and recommendations around how to incorporate recovery into dance training.

### NEW IMPLICATIONS

This presentation will provide attendees with an example of how recovery can be incorporated into training with examples of how methods can be adapted for individual needs. It emphasizes the importance of recovery in elite training and provides attendees with evidence-based information on the 'how' and 'why' of enhancing recovery in performing arts settings.

### KEYWORDS

Vocational dance training, stress, recovery, well-being, performance psychology.

### CONTACT

Peta Blevins

**Background:** A balance between stress and recovery is essential for any individual striving to achieve peak performance (Kellmann & Beckmann, 2018). Elite level trainee and professional dancers experience stress from training and non-training sources (Grove, Main, & Sharp, 2013), however little is known about the mechanisms by which dancers utilize recovery practices to produce optimal performance.

**Methods:** Using a mixed methods approach, four studies examined the sources of physical and psychological stress reported by vocational dance students, and explored the benefits and challenges of integrating psychological recovery practices (self-report recovery monitoring and mindfulness training) into vocational dance training.

**Results:** Overall, the findings of the four studies (*n's* = 12 – 86) indicate that improving recovery practices in dance training can have a positive impact for dance students' wellbeing. Dancers monitoring their recovery can more easily identify periods when increased recovery practices are required to balance an increase in stress. However, vocational dance students already undertake high workloads and the addition of recovery monitoring tasks may be perceived as an additional stressor, risking non-compliance. This non-compliance may be mitigated by emphasizing the improvement to the dancers' wellbeing, as well as the associated benefits to performance.

**Conclusions:** Within the dance training environment, improving recovery practices remains an underutilized method for improving performance, and enhanced recovery monitoring will involve a culture shift at both individual and organizational levels.

### Biography: Peta Blevins

Peta is a dance scientist, educator, and researcher, and working in community, vocational, and professional dance. She specializes in Dance and Performance Psychology, Safe Dance Practice, and Dance Fitness, and has worked with a number of institutions and dance companies in the UK and Australia. Peta has a BPsych from the University of Western Australia and a MSc in Dance Science (Distinction) from Trinity Laban. She is also a qualified theatrical dance teacher, having trained, taught, and performed in Australia and the UK in a variety of dance styles. Peta is currently a sessional academic staff member in the Dance Department at the Western Australian Academy of Performing Arts, where she is also completing a PhD, generously funded by an Edith Cowan HDR Scholarship and an Excellence Award. Her research interests include enhancing recovery in dance and the application of mindfulness and psychological skills to dance training and performance. Peta is a member of the International Association for Dance Medicine and Science (IADMS), Ausdance, and the Australian Society for Performing Arts Healthcare (ASPAH) where she serves on the Executive Committee.

## Paper Presentation

# Health education for secondary school teachers and students: A scoping review

Dr Alison Evans[1], A/Prof Bronwen Ackermann[2] and A/Prof Suzanne Wijsman[3]

[1]BMus(perf), MMus(perf), GDTL, PhD, The University of Sydney, Australia.
[2]BAppSc(PT), Grad Dip OHS, MPH, PhD, The University of Sydney, Australia.
[3]BMus, BA, MA, Mus.M., DMA, The University of Western Australia, Australia.

### NEW INSIGHTS

Results from the scoping review will provide a synthesis of evidence of health promotion intervention trials with instrumental musicians.

### NEW IMPLICATIONS

These results may potentially inform appropriate health promotion strategies to be implemented and evaluated with secondary school cohorts of instrumental musicians.

### KEYWORDS

Health promotion, prevention, interventions, playing-related musculoskeletal disorders, instrumental musicians.

### CONTACT

Alison Evans

**Background:** Recent research into providing health promotion programs for tertiary music students has emerged in the UK, Europe and Australia, however, this is not typically encompassed in music training globally. As yet, no health education resources have been tested with secondary school aged musicians, who reportedly suffer performance-specific health problems. This review aims to evaluate current evidence to determine appropriate strategies to trial with secondary school musicians.

**Methods:** Literature was searched using seven databases (PubMed, Scopus, Cinahl, Embase, PsycINFO, Web of Science and ERIC) for all published records to 12 July 2018 (keywords: "health promotion", "health education", "injury prevention", "intervention", "health program", "health resource*" and "music*", "pianist*", "instrument*". Articles evaluating health education for tertiary and secondary school musicians were included.

**Results:** Recent intervention trials with tertiary musicians indicates the efficacy of health promotion programs to improve injury prevention knowledge and application. Preventative education has shown positive impacts on students' performance and health attitudes. The 'map' of main results and descriptive summary outlining key information relevant to the review questions will be presented and discussed.

**Conclusions:** Current literature in playing-related injury-prevention suggests an urgent need for musicians' health education research. Student musicians remain at high risk of performance-specific health problems, and current training provides inadequate health information. These results synthesizes the existing body of knowledge and may potentially inform future implementation research projects with secondary school musician cohorts in Australia.

## Biography: Dr Alison Evans

Dr Evans has expertise in music performance, specialising in bassoon and chamber music. Her doctoral studies focused on performing-related musculoskeletal disorders (PRMDs) in musicians, in particular stress velopharyngeal insufficiency that can affect woodwind and brass instrumentalists. As a result, her research has increased awareness among the music and health-care professions to recognize potential risk factors and symptoms or this lesser-known PRMD. As a music educator, Dr Evans is passionate about applying music pedagogy and health research, to make changes to teaching and learning processes. Her commitment to this field is driven by wanting to help other musicians minimise their risk of experiencing playing-related pain or injury. Dr Evans' current research aims to implement health policy frameworks into music training institutions and professional music associations to ensure music students' training includes fundamental health knowledge required for optimal music performance and minimising occupational risk factors that lead to playing-related injuries.

Paper Presentation

# Development and design of a health literacy self-assessment tool for student musicians

A/Prof Suzanne Wijsman[1], A/Prof Bronwen Ackermann,[2] Prof Peter Visentin,[3] A/Prof Rae de Lisle,[4] Dr Vera Baadjou,[5] Dr Christine Guptill,[6] Dr Bridget Rennie-Salonen,[7] Dr Sonia Ranelli,[8] Prof Dawn Bennett[9], Prof Jane Ginsborg[10]

[1]BMus, BA, MA, MMus, DMA, The University of Western Australia, Australia.
[2]BAppSc(PT), Grad Dip OHS, MPH, PhD, The University of Sydney, Australia.
[3]MMus, BMus, The University of Lethbridge, Canada
[4] MNZM, PhD, BA, LRSM, LTCL, FIRMT, The University of Auckland, New Zealand
[5]MD, PhD, Maastricht University, Netherlands
[6]BMus, BSc, PhD, The University of Alberta, Canada
[7]BA, PGDipMus, LicAndover Educator, The University of Cape Town, South Africa
[8]BSc, MSc, PhD, Curtin University, Australia
[9] PhD, ALTF, PFHEA, Curtin University, Australia
[10]Royal Northern College of Music, United Kingdom

## NEW INSIGHTS

A health literacy perspective can offer new insight and understanding of the target population's needs that can be useful in devising health education interventions for music students in tertiary educational settings.

## NEW IMPLICATIONS

To date, no health literacy self-assessment tool has been developed specifically targeting musicians and their health needs.

## KEYWORDS

Health literacy, health education, health promotion, musicians' health, tertiary music education

## CONTACT

Suzanne Wijsman

**Background:** Health literacy has been defined by the World Health Organisation as "the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand and use information in ways which promote and maintain good health."[1] Strategies to improve the health of music students by the simple provision of health education are often obstructed by student behaviours, attitudes and institutional cultures. A multidimensional health literacy self-assessment tool can help to gain understanding of underlying factors that may impede the effectiveness of health education and improved health outcomes for this population. This presentation will outline the process of developing a health literacy self-assessment tool for musicians.

**Methods:** A conceptual framework for defining health literacy (Sørensen et al. 2012) and systematic review of existing tools (Haun et al. 2014) were used to identify health literacy dimensions applicable to this population. Evidence-based multidisciplinary research into musicians' health, health promotion and education then informed the selection and adaptation of questions and their psychometric properties for a musicians' health literacy assessment tool.

**Results:** Development and design of a health literacy self-assessment tool for pilot trial in tertiary music education settings.

**Conclusions:** A multidisciplinary approach and existing conceptual frameworks can inform the design of a multidimensional health literacy tool for student musician populations to study factors which impede improved health outcomes for music students.

[1] http://www.who.int/healthpromotion/conferences/en/

## Biography: Suzanne Wijsmand

Suzanne Wijsman is Associate Professor in the Conservatorium of Music at the University of Western Australia. Suzanne's research interests in musicians' health have included the application of motion capture technology to study the biomechanics of cello bowing, and embedding performance health education into tertiary music learning. In collaboration with Bronwen Ackermann of the University of Sydney, she was leader of *The Musicians' Health Curriculum Initiative*, funded by a Priority Projects grant from the Australian Office of Learning and Teaching (OLT). This supported the development of the online music performance health learning resource *soundperformers.com*. She is academic leader of a Worldwide Universities Network (WUN) Research Development Fund project, *Health Education Literacy and Mobility for Musicians: a global approach*, to create an interdisciplinary, multicultural research network focused on developing innovative, sustainable, effective and accessible approaches to musicians' health education in higher education settings. Co-authors of this presentation are collaborating researchers on this project.

## Paper Presentation

# Exploring growth mindset in tertiary music performance majors: A preliminary investigation.

Dr Naomi Halls[1] and Dr Elizabeth Lim[2]

[1] ASCM, BA, Grad.Dip. Psych., B.Soc. Sci. (Honours), MPhil (Psychology), DClinPsych
[2] ASCM, BMus, MMus, The University of Sydney, Sydney Conservatorium of Music

### NEW INSIGHTS

It is anticipated that this preliminary study will support the literature. This will inform the development of a pedagogical tool that supports a growth-focused mindset approach that may contribute to the overall wellbeing of musicians.

### NEW IMPLICATIONS

Implementing a tool that embeds growth-focused mindsets and coping strategies within instrumental lessons may increase performance outcomes and increase wellbeing in tertiary music performance majors.

### KEYWORDS

Musicians, growth-mindset, performance outcomes, wellbeing.

### CONTACT

Dr Naomi Halls

**Background:** Music performance exam candidates report high levels of stress prior to recitals, auditions and exams. A performer's expectations for success can detrimentally affect wellbeing and performance outcomes. An intervention that explicitly teaches evidence-informed growth mindsets, delivered in a timely, practical and contextually relevant way, may be beneficial for musicians. This preliminary study explores the expedience of embedding an intervention in instrumental lessons to support growth-focused thought patterns and coping strategies.

**Methods:** A literature review explored evidence-informed growth-focused thought patterns and coping strategy interventions in the general population of students. A small group (n=15) of performance majors (attending Sydney Conservatorium) participated in a semi -structured interview exploring thinking patterns, internal/external triggers and coping strategies. Participants also completed measures of trait anxiety, anxiety sensitivity, depression, and music performance anxiety.

**Results/Conclusions:** It was hypothesised that the results of a small sample of tertiary music majors would reflect the findings in the literature (results to be assessed during 2018). Consideration will then be given to the development and trial of a pedagogical tool that explicitly supports evidence-informed growth-focused thought patterns and coping strategies.

### Biography: Dr Naomi Halls

Dr Naomi Halls is a musician, teacher, AMEB senior examiner and clinical psychologist. Naomi's qualifications include ASCM (NSW Conservatorium), Graduate Diploma of Psychology (Distinction), Bachelor of Social Science (Psychology) (Honours) (Charles Sturt University), Bachelor of Arts (English, History), Master of Philosophy (Psychology) and Doctor of Clinical Psychology, Macquarie University. Her doctorate, for which she was awarded the Vice Chancellor's Commendation, focused on understanding and developing strategies for music performance anxiety. In 2012 in conjunction with The Emotional Health Centre at Macquarie University, Naomi developed an effective treatment for music performance anxiety using cognitive behavioural therapy.

Naomi was appointed AMEB examiner in 1988, Senior Examiner in 1995 and has examined candidates for Licentiate and Fellowship awards. In 2018, Naomi gave the keynote presentation for NSW AMEB Examiner's 100 Year Meeting, titled *"Its not rocket science, it's brain science… a spot of body language, and how to get to lunch on time".*

Naomi has presented papers at The National Flute Convention (2005), The Flute Teacher's Forum of NSW (2005–2007), and The World Forum for Music in Brisbane (2013) and ASPAH Symposium (2017). She has adjudicated for Armidale, Coffs Harbour, Hawkesbury, Macarthur, St George, Penrith and Sydney Flute eisteddfods.

## SUNDAY 11AM Workshop A

# Negotiating pain and discomfort through resilience: Resilient Vulnerability©

Dr Mark Seton

[1] PhD, Theatre and Performance Studies, The University of Sydney, Australia

### NEW INSIGHTS

This workshop provides some foundational skills that enable performing artists to better practice self-care and feel empowered to claim their rights as human beings and creative practitioners.

### NEW IMPLICATIONS

The workshop provides some practical skills to help performers negotiate psychological pain and alleviate discomfort, as a practice of self-regulation, prior to any longer term professional support they may later need to seek out.

### KEYWORDS

Pain, discomfort, vulnerability, resilience

### CONTACT

Dr Mark Seton

**Background:** Actors Wellbeing Study (2013) identified many actors experience discomfort in attempting to contain or 'let go' of physically, psychologically or emotionally intense roles. Entertainment Assist survey (2015) of performing arts workers (including actors, musicians and dancers) found that performers are expected to tolerate harsh criticism, harassment and bullying.

**Methods:** Resilient Vulnerability© has been used in several performing arts training institutions to help actors, musicians and dancers process stress, trauma and identity destabilisation and build networks of support to stand firm against shaming and bullying.

Participants will be provided with techniques to
1. Use playfulness in creative exploration and savor joy
2. Nurture self-compassion and manage generous boundaries
3. Identify personal preferences in taking in and 'letting go' of artistically intense experiences

**Main Contribution:** Resilient Vulnerability© enables performers to be more resilient while retaining a necessary vulnerability to engage in creative, risk-taking work. Participants will practice skills using InterPlay© physical forms and insights from shame and vulnerability research of Dr Brene Brown (2012) *Daring Greatly*, New York, NY: Penguin Random House.

**Conclusions:** Actors, musicians and dancers will develop resilience in their self-worth, and confidence to negotiate rather than tolerate pain and discomfort. They will be able to tackle physically and psychologically/emotionally demanding roles or pieces of music or movement with personal, resilient practices. They will learn to manage/reduce anxiety and depression by dealing constructively with criticism, bullying and shaming.

### Biography

Dr Mark Seton is the director of Sense Connexion www.senseconnexion.com, founder of the Resilient Vulnerabilty © paradigm, and an Honorary Research Associate (Department of Theatre and Performance Studies) at the University of Sydney. He lectures in health for actors at the International Screen Academy and Academy of Film Theatre and Television, and theatre history at Excelsia College. He was the recipient of the 2009 Gilbert Spottiswood Churchill Fellowship and conducted a study tour of actor training healthcare practices in the UK. His research interests include the psychological wellbeing of performing artists and ethical teaching and research practices in Higher Education Creative and Performing Arts. Alongside membership of the Editorial Board of the *Journal of Applied Arts and Health,* Mark is a member of the Executive Committee of the Australian Society for Performing Arts Healthcare, of which he was a founding member.

# SUNDAY 11AM Workshop B

## Attending to the whole – Training better overall coordination

Greg Holdaway

MExSpSci (hons), BodyMinded: Sydney Alexander Technique, Australia

### NEW INSIGHTS

Specific injury prevention and rehabilitation are fundamentally related to overall neuromuscular coordination

### NEW IMPLICATIONS

The focus on overall postural and movement coordination has implications for practical approaches to both clinical practice and research.

### KEYWORDS

Alexander Technique, injury prevention, rehabilitation

### CONTACT

Greg Holdaway

Sir Charles Sherrington, the father of contemporary neuroscience, stated "To take a step is an affair, not of this or that limb solely, but of the total neuromuscular activity of the moment."

Artistic performers train intensively over long periods, and face injury risk from poor overall coordination, where specific pressures are being repeatedly created. Once habitual coordination been well-established by training, attempts to specifically retrain muscular action is challenging due to the integrated nature of neuromuscular activity. This is especially the case after injury, where generally coordination is further affected by the stiffness and discomfort associated with anxiety and movement compensations. This also applies where a performer has trained in one way, only to discover, or be told, that this must be changed to prevent future injury or limitation of performance capacity.

Training methods based on the Alexander technique are well known in the performing arts arena as providing a means by which performers can create better overall coordination to assist with the management of tension, stress and injury. While formal evidence of effect within the Performing Arts arena remains limited, with the exception perhaps of effects on performance anxiety, there are many publications and anecdotal accounts of artists including Musicians, Actors and Dancers using the technique to good effect. Clinical evidence for the effectiveness of the Alexander technique in such areas as chronic back and neck pain, and studies into mechanisms of effect are increasing.

This workshop will focus on the fundamentals of what is meant by 'better overall coordination' in the context of the technique and how this can be brought about. The workshop will be practical, with exercises and demonstrations, and time will be provided for questions of both theoretical and practical nature.

### Biography

Greg Holdaway has been training, teaching and investigating human movement and behaviour for over 30 years. He holds a Masters of Exercise and Sport Science (Clinical Exercise Science) Honours from Sydney University and has interests in the relation between the sensory experiences of movement and movement coordination. He is particularly fascinated by the relation between conscious and unconscious aspects of body organisation in action. Clinically Greg maintains a private practice and has extensive experience teaching Alexander technique to performers of all kinds, especially musicians. He is Director of Teacher Training at BodyMinded: Sydney Alexander Technique and Associate Director of the BodyChance programs in Japan.

## PANEL DISCUSSION

### Psychological support in the performing arts sector:

### Celebrating the founding of an Australian Psychological Society Special Interest Group on performing arts and entertainment industry psychology

*Chaired by Dr Mark Seton*

Join us for this panel discussion with Dr Mark Seton, Honorary Research Associate (Department of Theatre and Performance Studies, University of Sydney), as Chair, and special guest, Simon Ward, performing artist and psychologist consultant for the arts industry (Nomiz Australia).

This informal panel will open conversation around current experiences and future opportunities.

The aim of this panel discussion is to identify and enhance the contribution of psychological support and research that supports the wellbeing of those who participate in all aspects of the performing arts. Come along and share your thoughts, hopes, challenges about mental wellbeing and how it can help performing arts practitioners flourish.

## SURVEY

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