

Healthy Development Adelaide (HDA)

A Research & Innovation Cluster in South Australia

www.adelaide.edu.au/hda

Newsletter

Volume 8, Issue 1
February 2012

Upcoming Events...

• 18-21 March

The 17th Congress of Federation of Asian and Oceania Perinatal Societies (FAOPS) and 16th annual Congress of the Perinatal Society of Australia & New Zealand (PSANZ) will be held in Sydney, Australia.

• 21-24 March

The 59th annual scientific meeting of Society for Gynecologic Investigation will be held in California, USA.

• 21-24 March

The American Association for Dental Research annual meeting will be held in Florida, USA.

• 31 May - 2 June

The joint Congress of American Society of Reproductive Immunology (ASRI) and the European Society for Reproductive Immunology (ESRI) will be held in Hamburg, Germany.

Further information at
www.adelaide.edu.au/hda/events

An initiative since 2004



LATEST NEWS

New HDA Members

Professor Steve Wesselingh

Executive Director
South Australian Health and Medical Research Institute (SAHMRI)

Focus on infectious disease; neuro virology, HIV.

Professor Murray Drummond

Professor in Sport, Health & Physical Education
School of Education, Flinders University

Focus on male body image, qualitative research on child nutrition and physical activity.

Dr Catherine Chittleborough

Postdoctoral Researcher
Discipline of Public Health, School of Population Health & Clinical Practice, University of Adelaide

Focus on early child development, prediction models, life course, health inequalities.

Dr Paul Anderson

Musculoskeletal Biology Research Lab
SA Pathology (RAH)

Focus on nutrition and skeletal development, vitamin D metabolism.

Dr Stephen Bent

Lecturer in Bioinformatics
Discipline of Genetics, School of Molecular and Biomedical Science, University of Adelaide

Focus on bioinformatics; placental gene expression, pathogen evolution, metagenomics.

Ms Jaqueline Sudiman

PhD student
Robinson Institute, University of Adelaide

Focus on assisted reproductive technology (ART), oocyte biology and early development.

Members are asked to

- Endorse HDA's vision, objectives and good reputation
- Engage in a free exchange of information and work on the basis of trust and goodwill
- Behave ethically, as an individual member and within partnerships, maintaining professional conduct
- Maintain confidentiality of information related to HDA where appropriate
- Be willing to partake in the activities of HDA in an appropriate capacity

Member benefits

Based upon contributions or involvement with HDA, members can receive HDA travel grants, top-up PhD scholarships and/or awards.



HDA Partners



Anne Jurisevic, HDA Executive Officer :

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I began studying psychology in 2005 through Bachelor of Psychology (Honours) program at Flinders University. In 2008 I became particularly interested in working with children with autism spectrum disorder through my work as an applied behaviour analysis therapist.

I completed my honours in 2009, under supervision of Nathan Weber. We investigated whether children had developed metacognitive skills required to make accurate eyewitness identification decisions.

In 2010 I began my PhD in Clinical Psychology at Flinders University, under supervision of

Nathan Weber and Robyn Young. For this we are exploring possible reasons for large gender discrepancy in diagnostic rates of autism. It's estimated that boys are diagnosed with autism at rate of four times greater than girls, with this difference most prominent at higher-functioning end of the spectrum. I am particularly interested in whether girls may have access to cognitive or social protective factors that could be contributing to the course of the disorder and hence difference in diagnostic rates. If girls do have access to environmental protective factors it may mean that atypically-developing girls are less likely to reach criteria for an autism diagnosis either because their symptoms are less severe or because they are better able to cope with the behavioural presentation of the disorder.

For my first project I explored gender differences in theory of mind abilities of two to five year old typically-developing children. The investigation of this cognitive ability as a protective factor was due to its association with early social development, a key deficit in children with autism. Using the proposed five-item scale of theory of mind development (Wellman & Liu, 2004) we found evidence of a gender difference on only one of five theory of mind abilities. Children who passed this task (known as 'Knowledge Access') were given significantly higher teacher-ratings for prosocial behaviour and significantly lower ratings for aggression. A large gender difference was also evident for teacher-ratings of preferred play style, with 75% of girls and only 23% of boys rated as mostly engaging in conversational pretend-play.

Previous research indicates that this type of play exposes children to many of the 'rules' of social interaction.

Stemming from these findings, my next project will explore gender differences in the social and emotional understanding of children with high-functioning autism, when faced with specific social situations.

My primary area of interest is early child development, where early intervention (or lack thereof) can have a significant impact on a child's developmental trajectory. Other areas of interest include child and adolescent sleep, the treatment of childhood anxiety disorders (particularly posttraumatic stress disorder), and the role of parent-child attachment on later mental health.

☎ 8201 2370

✉ rachel.hiller@flinders.edu.au

HDA TRAVEL GRANT

RECIPIENT CONFERENCE REPORT 2011

Dr Nicolette Hodyl - Robinson Institute, University of Adelaide

In September 2011, I attended the 7th World Congress on Developmental Origins of Health and Disease (DOHaD) in Portland Oregon, USA. DOHaD is an international society aimed at promoting multi-disciplinary research into the fetal and developmental origins of health and disease. This research ranges from scientific bench work, exploring the underlying biological mechanisms of developmental processes, to epidemiological studies, ultimately resulting on translational work to implement research findings into the public health sector through the introduction of innovative health policies. The meeting therefore covered a broad range of topics: addressing global challenges in DOHaD research and policy introduction and implementation, early origins of cognitive, mental health and social development, the effects of malnutrition (both under-nutrition and obesity) and supplementation during pregnancy, understanding "healthy growth", the effect of prenatal infection (with reports on the recent H1N1 virus) and exploring the placenta as playing a critical role in programming future health states. The latter was particularly interesting for me, as our group has for some time been exploring placental mechanisms that result in poor fetal growth, as well as the placental response to maternal infection and inflammation. The plenary sessions focusing on the role of the placenta in mediating disease susceptibility, as well as its emerging potential as a biomarker for future disease states, were particularly well attended with lecture rooms filled to maximum capacity. For the first time, the DOHaD conference also focused on the preterm infant, with presentations detailing both

the implications of current clinical management of these vulnerable infants, disorders related to preterm birth, and the long-term developmental trajectories for these children.

I presented three papers at this conference, and all three attracted a great response, and useful discussion with international researchers. I am now in contact with researchers in Canada who are keen to advise and collaborate on longitudinal studies of the infants we have recruited into our asthma in pregnancy cohort, as well as our preterm infant cohort. Importantly, we have bio-banked the placenta from these pregnancies, which made our research group very attractive for collaborative efforts on the longitudinal studies of these children. The discussions over my posters, together with lectures and symposia, were very useful in expanding my research ideas and directions beyond my initial focus. This critical evolving process in research design, expansion and collaboration would not have happened without my attendance at this conference: Thank you very much HDA for your funding support.

Portland is a beautiful city, and is steadily becoming recognized as a world leader through its initiatives regarding both health policy implementation and urban design. This was my first visit to USA and I thoroughly enjoyed it and am eager to return. Although it was a fleeting visit, I managed to embrace many "american" cultural (i.e. food) experiences – bagels with cream cheese, pizza, chinese food out of a box, burritos the size and weight of a brick, weak coffee, buffalo wings, and a run-in with a very large footballer who threatened to steal my pizza through rap music. All good fun and a great all-round experience.

RECENT HDA EVENTS

HDA Thematic Evening: Brain, Behaviour and Development

On 20 October 2011, HDA hosted its final Thematic Evening for the year on **'Brain, Behaviour and Development: the future looks bright!'** to an audience of 250 people. The event was sponsored by The Robinson Institute, University of Adelaide and was chaired by Professor Claire Roberts, Senior Research Fellow within Robinson Institute.

Speakers included Professor Jozef Gecz (SA Pathology) on *Genetic causes of epilepsy in children: latest developments and future research*; Dr Debbie James on *Let's talk about children's communication, speech and language needs*; Dr Manya Angley (UniSA) on *Autism research: progress and future directions*; and Ms Donna Nitschke (DECD) on *Building the best brains: child brain development and action in schools*.



Seminar: Developmental Overnutrition



On 24 January 2012, HDA co-hosted a seminar with the School of Population Health and Clinical Practice, University of Adelaide and the Robinson Institute, University of Adelaide on **Developmental Overnutrition: an old hypothesis with new relevance?**. This seminar was presented by visiting UK epidemiologist Professor Debbie Lawlor who provided current evidence into the complexities of the underlying mechanisms associated between pregnancy diabetes and having a heavier and fatter baby.

The talks can be found at www.adelaide.edu.au/hda/news

HDA TRAVEL GRANT

RECIPIENT CONFERENCE REPORT 2011



Dr Prabha Andraweera
The Robinson Institute, University of Adelaide

12th International Congress of Human Genetics was held in Montreal, Canada 10-15 October 2011. The congress featured very latest in Basic Science and Clinical research on human genetics and comprised workshops, scientific forums and scientific communications addressing latest clinical controversies and research advances in field. Congress had over 7500 delegates and comprised 26 plenary lectures 324 oral presentations and 3489 poster presentations. Conference focused on genetic basis of human diseases including hereditary monogenic disorders as well as multifactorial diseases. Sessions provided insights into recent genetic advances and molecular mechanisms underlying complex disorders, genetic instability in development, aging & cancer.

In addition to the many discussions on Mendelian expression of diseases, much was emphasized on the recent recognition of the complex etiology of phenotypes resulting from developmental, epigenetic, and mitochondrial gene expression. The speakers explored multiple phenomena affecting the interplay between genes and complex disease, including the role of energy systems directed by mitochondrial DNA. In addition, the stochastic establishment of epigenetic modifications, including DNA methylation and chromatin remodelling, were well explored. Examples of these processes in normal and abnormal phenotypic models were shown, clearly demonstrating new understandings of the challenges of clarifying how gene expression interacts with environmental factors to make genotype/phenotype correlations more complex. Many findings on gene-gene and gene-environment interactions were shown to have strong associations with later life medical disorders including coronary artery disease and type 2

diabetes mellitus. The findings in these studies pointed towards potential dietary and lifestyle modifiable risk factors which would reduce the hereditary risk of these disorders.

The plenary session "beyond genome-wide association study: integrating transcriptome, proteome, and pathway data in the genetic dissection of complex traits" discussed the latest advances in integration of genomic data with other types of biological data to extract maximal amount of information from genomic studies and enhance the ability to gain knowledge about the genetic architecture of common, complex traits. The speakers emphasized importance of integrating a variety of functional data types such as proteomic, gene expression, imaging, clinical and laboratory data, metabolomics and pharmacogenomics to support findings of genome wide association studies which I found particularly important for my PhD studies.

The congress also featured the latest developments in the understanding of cellular defences against genetic instability which were shown to not only protect against cancer but facilitate normal development and prevent aging. The session on cancer genomics also provided the latest advances in cancer genomics including The Cancer Genome Atlas. I also found the workshop on "publication" very useful. The workshop was conducted by editors of leading genetics journals who discussed the review process and the expectations of these journals.

I had the opportunity to present a poster titled "Single nucleotide polymorphisms in angiogenesis regulating genes and the risk of preeclampsia and small for gestational age infants: evidence from parent-infant trios". I also had the opportunity to meet several researchers from international universities who expressed their interest in collaborative research.

Overall the conference provided latest knowledge from around the world on research in the field of human genetics and provided the opportunity to meet international clinical and research leaders in the field.

Study to track the impact of ADHD medication on children

Volume 8, Issue 1

Media Release - 10 January 2012, UniSA

UniSA researchers are about to launch an investigation into the impact of ADHD medications on children in a bid to pinpoint how stimulants such as Ritalin and dexamphetamine may be impacting areas of the brain that control movement.

With more than 560,000 prescriptions for ADHD medications dispensed in Australia in the past year alone and prescription rates of ADHD medications on the rise, the research is vital for the safe use of these stimulants. UniSA researchers are recruiting participants for the study including children with ADHD who have been taking medications for more than a year, children with ADHD who are un-medicated and children who do not have the condition.

Dr Gabrielle Todd from the University's School of Pharmacy and Medical Sciences says the study will make an important contribution to our knowledge about the impact of stimulant medications on children in the long term.

"The effect of using these drugs over a longer period is not well understood and it has already been noted that ADHD children treated with stimulants have an abnormality in the area of the brain that controls movement," Dr Todd says.

"What we really don't know is if the medication causes that abnormality or if it is a feature of ADHD itself.

"Many children are taking the medications over several years so it is vital that we understand the full impact.

"This study will be important in clarifying the facts around Ritalin and dexamphetamine and influence how we treat the disease in the future."

Dr Todd says the study will involve children in a range of simple hand and body movements and will include a non-invasive ultrasound of the brain and an interview with the child's parent or guardian.

"We are looking for 50 children (aged from 6 to 18 years) in each of the three categories outlined and all participants will be compensated for their time," Dr Todd said.

"They will also know that they are contributing to research that may make all the difference to how we tackle ADHD in the future and to how we understand the use of drugs such as Ritalin and dexamphetamine."

To take part in the study, contact research assistant Miranda Leach on 8302 1248 or by email at miranda.leach@unisa.edu.au

School a good place to work on wellbeing

Media Release - 12 January 2012, Flinders University

Around the world, schooling is increasingly being viewed as an opportunity to promote students' overall mental health and wellbeing through the use of programs such as the local KidsMatter.

A new book, *Mental Health and Wellbeing: Educational Perspectives*, edited by Adjunct Professor of Psychology at Flinders, Rosalyn Shute, brings together contributions from academics, policy-makers and practitioners to examine the burgeoning phenomenon of wellbeing promotion in schools, and to discuss how it is best approached and what it should be aiming to achieve.

The 47 contributors to the book's 27 chapters include authors from the UK, Malta, Japan, Hong Kong, Greece, Spain, the US and the Lebanon as well as Australia.

"People in industrialised countries, particularly, have become very concerned about the mental health of children and adolescents, so trying to do universal programs in schools is one way in which this is being addressed," Professor Shute said.

In addition to discussing the nature and the content of these programs, the book's authors look at interventions such as those that target specific groups like adolescents, and also programs that address individual issues or problems such as bullying and disturbed sleep.

The book features seven case-studies, in which practitioners reflect on different examples of wellbeing promotion. "We hope that people get both theoretical and practical ideas out of this book," Prof Shute said.

"The basic implication is that mental health and wellbeing cannot and should not be separated from the mainstream curriculum. "While stand-alone programs are an option, wellbeing promotion should be part and parcel of teaching and learning.

"This has strong implications for teacher training and education, both pre-service and in-service, because time and time again, the authors were saying that teachers are not well prepared to deal with these kinds of issues, they may not be confident or they may not have the right information or the right skills."

Prof Shute said that the idea of taking a positive approach, as opposed to a mental health problems approach, came through very strongly in the book. "Preventative and reactive strategies both have their place, but this book tends to concentrate on the former," she said.

Prof Shute is a member of SWAPv, the Flinders Research Centre for Student Wellbeing and Prevention of Violence, co-directed by Prof Phillip Slee and Prof Rosalind Murray-Harvey. The book is the Centre's first publication, and one of its aims is to make university research available to a wider audience.

Published by Shannon Research Press, the book is available by emailing katherine.dix@pa.edu.au

Wellbeing & Resilience Events

Dr Martin Seligman

Volume 8, Issue 1

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Adelaide Thinker in Residence - Dr Martin Seligman

Inaugural Lecture

Wellbeing and resilience: building a flourishing state

Dr Seligman's introductory lecture explores how we measure our own wellbeing as he approaches the challenge of making South Australia a flourishing state.

Wednesday 8 February, 6pm for 6.15pm start
Adelaide Town Hall

Free entry – bookings essential

SOLD OUT! **Sign up to the waitlist** to be notified of any extra tickets that become available

Positive Education

Using the science of positive psychology to provide an education that brings out the best in all

This free lecture, presented by Dr Seligman, will look at best applications in wellbeing and positive education.

Tuesday 14 February, 6.45pm for 7pm start
Memorial Hall, St Peter's College

Free entry – book at stpeters.sa.edu.au

The Science of Wellbeing

More than the absence of illness

A one-day conference exploring the role of Positive Psychology in promoting mental and physical health.

Friday 24 February, Hilton Adelaide Hotel

Call for Papers is now closed. Program details will be available on website soon. Tickets available through VenueTix

Wellbeing before Learning

Flourishing students, successful schools

This full day conference will explore theoretical and practical approaches to embed positive psychology into schools and early childhood services.

Monday 27 February, Adelaide Convention Centre

Program details will be available on website soon. Tickets available through VenueTix

For full details on all these events go directly to the Adelaide Thinkers in Residence website at www.thinkers.sa.gov.au

The University of Adelaide expands the frontiers of knowledge more frequently, and in more disciplines, than any other institution in South Australia. Our leading researchers, many globally recognised, relentlessly seek answers that will positively impact life on earth.

The Research Tuesdays monthly presentation series is your chance to share in some of their most fascinating discoveries.



Research Tuesdays

SHARING GREAT RESEARCH WITH THE COMMUNITY

Get your Stomach in Mint Condition

Dr Stuart Brierley

Tuesday 14 February, 5:30pm - 6:30pm

Napier 102 Lecture Theatre

North Terrace Campus, University of Adelaide

Synopsis

How a humble herb could finally bring an end to the misery of Irritable Bowel Syndrome. One of the most prevalent forms of chronic pain in Australia, Irritable Bowel Syndrome (IBS) significantly impairs the quality of life of up to 20% of our population.

But thanks to University of Adelaide's Nerve-Gut research team, clinically effective relief may at last be in sight.

The group has been investigating the action of peppermint, anecdotally reported to ease the racking pain asso-

ciated with IBS, yet previously medically unproven. Employing a complex range of methodologies, the team has not only been able to show that peppermint does indeed soothe inflammatory pain in the gastrointestinal tract, but crucially has identified the specific mechanosensory channel through which it works.

In this important presentation, team leader Dr Stuart Brierley will present the findings and explain why IBS sufferers finally have cause for optimism.

About the Speaker

Dr Stuart Brierley is a National Health & Medical Research Council (NHMRC) Australian Biomedical Fellow. He's internationally recognised for his research into acute and chronic gastrointestinal pain, and was a 2011 South Australian Tall Poppy award winner.

Admission Free, bookings essential. For more info and to register online go to: www.adelaide.edu.au/researchtuesdays



**Alastair through the ages:
Ensuring women's and babies' future good health**

To celebrate the medical career of Professor Alastair H MacLennan AO
Professor Alastair MacLennan, Head of Discipline of Obstetrics and Gynaecology,
School of Paediatrics and Reproductive Health, University of Adelaide
will be honoured at a special Scientific Symposium

After 35 years in Adelaide and 44 years practising medicine, Alastair is retiring.
The Scientific Symposium will celebrate the major contributions Alastair has made in
maternal perinatal medicine, reproductive medicine, cerebral palsy causation,
menopausal medicine and his calls for evidence within complementary medicine

Friday 2 March - Scientific Symposium

8.30am - 5.00pm, Queen Victoria Lecture Theatre
Level 1, Queen Victoria Building, Women's and Children's Hospital
72 King William Rd, North Adelaide

Cost: \$120 per person (students \$60)

Cerebral Palsy: The risks, the problems, the challenges

Cerebral Palsy: risks & research to minimize
Beginning to understand the causation of cerebral palsy
Gene association & epidemiological studies
New genomic era – opening up the genetic universe

Relaxin through menopause and beyond

Relaxin: what is this hormone doing for women
Clinical research: a cautionary tale
Women well beyond the MacLennans

Obstetrics through the AHM ages

Trials, tribulations and transformations in obstetrics
Multiple pregnancy and research challenges
Induction of labour: research from the past, present and future

Information, ethics and evidence

Benefits for women's health from the South Australian health omnibus survey
Complementary and alternative treatments are neither; the challenge for medicine and our politicians
Expert opinion and scientific theory are nothing without the facts

Celebratory Dinner

7.00pm, Hickinbotham Hall, National Wine Centre of Australia
Corner of Botanic and Hackney Roads, Adelaide

Cost: \$160 per person

For more details and a registration form go to
www.adelaide.edu.au/robinson-institute/events/AHMcelebrations

or contact Jacki Smith : ☎ 8161 7619 ✉ jacki.smith@adelaide.edu.au

HDA Members

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The Minister for Mental Health and Ageing, Mark Butler, announced the single largest investment in grants for health and medical research in Australian history on 17 October 2011. The Government is providing \$673.7 million for 1,140 grants to support researchers, research projects and research institutions Australia-wide. This investment, through the National Health and Medical Research Council, will ensure that Australia continues to expand the frontiers of health and medical research.

Project Grants

Prof Gary Wittert, University of Adelaide
Testosterone intervention for the prevention of diabetes mellitus in high risk men: a randomised trial - \$4,822,905

Prof Caroline Crowther, University of Adelaide
Does antenatal magnesium sulphate given to women at risk of preterm birth between 30 and 34 weeks' gestation reduce the risk of death or cerebral palsy in their children? – a randomised controlled trial - \$1,978,760

Dr Grant Brinkworth, UniSA

- Long-term effects of a very low carbohydrate, low saturated fat diet compared to a conventional high carbohydrate, low fat diet on glycemic control and cardiovascular disease risk in overweight and obese patients with type 2 diabetes - \$1,267,290

Prof Jennifer Couper, University of Adelaide

- Early environmental determinants of pancreatic islet autoimmunity: a pregnancy to early life cohort study in children at risk of type 1 diabetes - \$1,083,720

A/Prof Leonie Heilbronn, University of Adelaide

- Does periodic fasting improve insulin sensitivity and metabolic health in humans? - \$809,130

Prof Claire Roberts, University of Adelaide
The role of Vitamin D in placental development and pregnancy success - \$699,625

Dr Michelle Lane, University of Adelaide
Diet and exercise intervention for paternal obesity improves offspring health - \$656,010

Prof Alastair MacLennan, University of Adelaide
Copy number variation in Cerebral Palsy - \$639,877

A/Prof David Kennaway, University of Adelaide
Circadian rhythm disruption and metabolic function - \$605,050

Dr Kirk Jensen, University of Adelaide
Understanding the posttranscriptional regulatory roles of the Hu family of RNA-binding proteins using HITS-CLIP - \$568,660

Prof Eric Gowans, University of Adelaide / Women's & Children's Health Research Institute
Mucosal immunity to human immunodeficiency virus - \$566,010

Prof Sarah Robertson, University of Adelaide
Inflammatory pathways for novel therapeutic interventions in pre-term delivery - \$548,675

Prof Deborah Turnbull, University of Adelaide
Optimising men's uptake of FIT screening for bowel cancer: a population based randomised controlled trial - \$539,990

Dr Michelle Lane, University of Adelaide
Viability assessment of human oocytes and embryos - \$475,909

A/Prof Janna Morrison, UniSA
Optimising lung surfactant protein production in the IUGR fetus at risk of preterm delivery - \$448,675

Prof Maria Makrides, University of Adelaide / Women's & Children's Health Research Institute
Does n-3 LCPUFA supplementation in pregnancy reduce asthma and allergies in school age children? - \$429,231

Centres of Research Excellence

Prof Maria Makrides, University of Adelaide / Women's & Children's Health Research Institute
Food for Future Australians - \$2,500,000

Early Career Fellowships

Mr Tod Fullston, University of Adelaide
You are what your father ate - \$294,892

Research Fellowships

Prof Claire Roberts, University of Adelaide - \$716,855

Prof Peter Clifton, Baker IDI Heart and Diabetes Institute - \$702,795

Prof Robert Gilchrist, University of Adelaide - \$655,910

National Heart Foundation Grants

HDA Members

Dr Lisa Moran, University of Adelaide

Dr Jim Dollman, UniSA

A/Prof Janna Morrison, UniSA