NGED Newsletter

Issue 15, May 2007

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http://www.nged.adelaide.edu.au

New Members

The NGED wishes to welcome the following new members (all member profiles have been added to the NGED website):

Vicki Clifton

Organisation: University of Newcastle
Department: Mothers and Babies Research Centre
Email: Vicki.Clifton@newcastle.edu.au
Phone: 02 4985 5641

Michael Dobbie

Organisation: Australian Phenomics Facility, Australian National University
Department: Scientific Programs
Email: michael.dobbie@anu.edu.au
Phone: 02 6125 9117

Miranda Grounds

Organisation: University of Western Australia
Department: School of Anatomy & Human Biology
Email: mgrounds@anhb.uwa.edu.au
Phone: 08 6488 3486

Kirk Jensen

Organisation: University of Adelaide
Department: Biochemistry
Email: kirk.jensen@adelaide.edu.au
Phone: 08 8303 3793

Vacancy

Australian Drosophila Biomedical Research Facility Manager Reference No.: RSBS4055

Postdoctoral Fellow - Fixed Term – 5 years
Academic Level A (Salary Package: $52,672 - $63,561 pa plus 17% super)

The Molecular Genetics and Evolution Group at the Research School of Biological Sciences wishes to appoint a Manager to oversee the establishment and running of a new facility to support Drosophila biomedical research throughout Australia.
Closing Date: 31 May 2007

For further information please refer to Attachment 1 of this newsletter.

ASMR Events in SA

The SA Branch of the Australian Society for Medical Research (ASMR) wishes to announce the following upcoming events:

Gala Dinner, Monday June 4th at the Observatory in Adelaide
RSVP at www.beamedicalresearcher.org by May 21st

Annual Scientific Meeting, Wednesday June 6th at The Adelaide Entertainment Centre
Register online at www.asmrfiles.org.au/register/sa/

Science in the Cinema, Thursday June 7th 5:45-9pm at Nova Cinema, Adelaide, a free event,
but bookings are essential via email to science.in.cinema@gmail.com

Lab News

Koopman Lab
IMB, UQ

The University of Queensland was advised by Research Australia that a UQ story has made the top 10 international stories for the year featured on a major US science media website. Kirsten Lodge from Research Australia advises that EurekAlert, which is an online science news service sponsored by the American Association for the Advancement of Science, received 22,918 hits on this story from the time it was posted on April 3, 2006 to July 30, 2006. Research Australia, which pays the EurekAlert subscription, posts news releases from a number of Australian universities to this site due to their strategic relationships with those organisations. The publication relating to the above is:

Bowles, J, Knight, D, Smith, C, Wilhelm, D, Richman, J, Mamiya, S, Yashiro, K, Chawengsaksophak, K, Wilson, MJ, Rossant, J, Hamada, H and Koopman, P (2006). 'Retinoid signaling determines germ cell fate in mice'. Science 312: 596–600.

Harvey Lab
VCCRI, Sydney

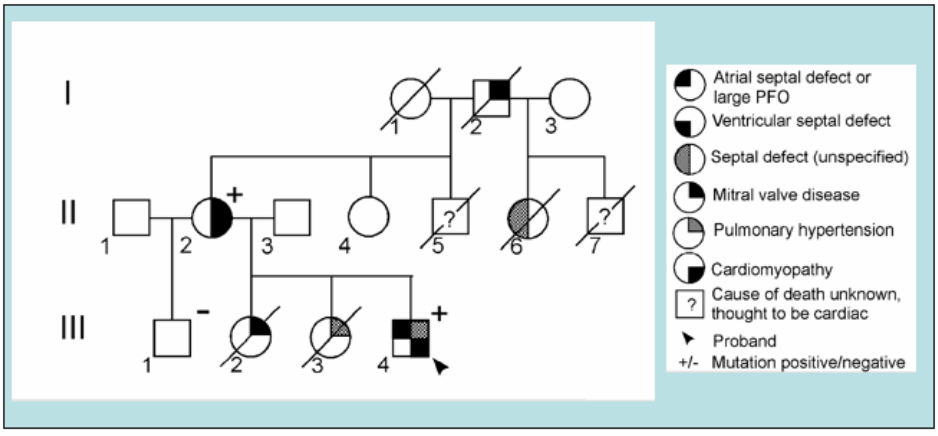
The following publication is in press at American Journal of Human Genetics:

"Mutations in cardiac T-box factor TBX20 are associated with diverse cardiac pathologies including defects of septation and valvulogenesis, and cardiomyopathy"

Edwin P Kirk*, Margaret Sunde*, Mauro W Costa, Scott A Rankin, Orit Wolstein, M. Leticia Castro, Tanya L Butler, Changbaig Hyun, Guanglan Guo, Robyn Otway, Joel P Mackay, Leigh B Waddell, Andrew D Cole, Christopher Hayward, Anne Keogh, Peter Macdonald, Lyn Griffiths, Diane Fatkin, Gary F Sholler, Aaron M Zorn, Michael P Feneley, David S Winlaw, Richard P Harvey (*these authors contributed equally to the work

Familial forms of congenital heart disease (CHD) have increasingly been recognised, with mutations in transcription factors (NKX2-5, TBX5, GATA4 and others) and structural proteins (MYH6, ACTC) having been identified in autosomal dominant CHD families. In this paper we report mutations in the T-box transcription factor TBX20 in two families. TBX20 acts in a conserved regulatory network guiding heart formation and patterning in diverse species. Mouse Tbx20 is expressed in cardiac progenitor cells, differentiating cardiomyocytes and developing valvular tissue; its deletion or RNAi-mediated knockdown is catastrophic for heart development.

The observed phenotypes in humans with TBX20 mutations are quite diverse, with congenital heart disease (mainly septal defects), mitral valve anomalies, primary pulmonary hypertension and cardiomyopathy. In the first family, a missense mutation (I152M) was identified and this was associated with relatively mild phenotypes. A premature stop mutation (Q195X) in the second family (see figure) was associated with more varied phenotypes, and the resulting cardiac disease was lethal in at least two individuals. The paper presents the results of collaboration between three clinical centres and four laboratories, with expression studies and biophysical modelling supporting the pathogenicity of the missense mutation. It is of particular interest that dilated cardiomyopathy was a feature of the TBX20 mutant phenotype in humans and mice, suggesting that mutations in developmental transcription factors can provide a sensitised template for adult-onset heart disease.



Grants / Awards / Prizes / PhD Completions

Amanda Lumsden, whose attendance at the 8th Australia & New Zealand Zebrafish Workshop was sponsored by the NGED, was the winner of the ANZSCDB-sponsored prize for the best student talk. Amanda is a member of Rob Richard's group at the University of Adelaide. Her presentation was entitled: "Investigating the Role of Huntingtin in Development and Disease; a Zebrafish Model". Amanda's abstract is attached to this newsletter.

Agnes Stokowski has completed her PhD in the laboratory of Dr Simon Koblar at the University of Adelaide. Her PhD Thesis was titled: "Guidance and Neuronal Properties of Dental Pulp Stem Cells". Agnes, who also recently got married, has taken up a post-doctoral position in the laboratory of Dr Stan Gronthos, Department of Haematology, Hanson Institute, Adelaide, SA. Congratulations, Agnes!

McMillen Lab: Staff and students of Caroline McMillen's lab at the School of Pharmacy and Medical Sciences, University of South Australia, have received the following awards and grants:

- SGI Presidents Presenter Award – Sheridan Gentili and Beverly Muhlhausler
- IASO Stock Conference Invited Participant and Travel Grant – Beverly Muhlhausler
- NGED Conference Participation Awards - Sheridan Gentili, Beverly Muhlhausler, Janna Morrison
- PSANZ New investigator Award – Beverly Muhlhausler
- Selection for Early Career Researcher Development Scheme, UniSA – Beverly Muhlhausler
- NHMRC Equipment Grant – Janna Morrison, Caroline McMillen, Beverly Muhlhausler

NGED Programs

The Network has introduced a number of programs to support the interaction amongst Network Members and with other researchers and research organisations from Australia and overseas. Award rules and application forms are available on the NGED website.

Closing Dates	Programs
31.07.2007	NGED Conference Support Awards The purpose of the NGED Conference Support Program is to assist conference organisers to provide high profile meetings in the areas of developmental biology / developmental physiology. Preference will be given to international conferences held in Australia with an emphasis on promoting multidisciplinary interactions in order to provide the greatest benefit to NGED members from different scientific backgrounds.
31.07.2007	NGED Conference Participation Awards The purpose of the NGED Conference Participation Award is to provide young scientists with an opportunity to present their work at a scientific forum, which they otherwise may not have been able to. Preference will be given to the Network's PhD students and early career researchers. Awards will not normally exceed $500 (for meetings in Australia) or $1,000 (for overseas meetings).
31.07.2007	NGED Laboratory Interchange Award The NGED Laboratory Interchange Award is available to assist NGED students, early career scientists and other members of the Network to visit other NGED laboratories to work on collaborative interdisciplinary projects, learn specialised techniques or access specialised equipment.
Ongoing	NGED Cross-Disciplinary Workshop Attendance Award To facilitate research interactions and research training activities, which cross discipline boundaries, the Cross-Disciplinary Workshop Attendance Award will assist NGED students, early career scientists and other members of the Network to attend cross-disciplinary workshops (i.e. a physiology student attending a developmental biology workshop).
31.07.2007	NGED Focus Group Award The purpose of this award is to support 'Focus Group/Think Tank Meetings' that lie within the objectives of the Network (i.e. strategic planning across the fields, Centre of Excellence planning, or establishment of collaborations between NGED groups that cross disciplinary boundaries).

LATE APPLICATIONS WILL NOT BE CONSIDERED

What's On….

01.11.07 – 02.11.07  	Monash Healthy Start to Life Research Initiative Healthy Start for a Healthy Life: The Wintour's Tale DOHaD Satellite Conference In recognition of the career of Professor Marelyn Wintour FAA Nov 1-2, 2007 Grand Hyatt Melbourne The Developmental Origins of Health and Disease (DOHaD) is quickly emerging as a major new research focus in basic and clinical medicine. In essence, DOHaD research focuses on the early origins of adult health and disease, as we are learning that the origins of many adult chronic diseases can be traced back to our embryonic, fetal and early childhood development. This Satellite Meeting, an initiative of the Monash Healthy Start to Life research initiative, is being held to recognise the outstanding contributions to this field by Professor Marelyn Wintour FAA. The Satellite will showcase our current understanding of the early origins of health and disease. The programme will include presentations from leading national as well as international researchers in this field. Confirmed invited speakers include: Dr Dino Giussani, University of Cambridge, UK Prof Maria Seron-Ferre, Pontificia Universidad Catolica de Chile Prof John Bertram, Monash University Dr Tony Hannan, Howard Florey Institute Prof Eugenie Lumbers, University of New South Wales Dr. Karen Moritz, University of Queensland Dr Susan Sayers, Menzies School of Health Research Prof Bruce Tonge, Monash University Centre for Developmental Psychology Prof Alan Trounson, Monash Immunology & Stem Cell Laboratories We look forward to seeing you at the Grand Hyatt Melbourne. John Bertram, Convenor For further information please visit www.asnevents.net.au/dohad
04.11.07 – 07.11.07	Epigenetics 2007 4 – 7 November 2007 Perth Convention and Exhibition Centre For further information please visit http://www.epigenetics2007.com/index2.htm
06.11.07 – 10.11.07 DOHaD 2007 Perth, Western Australia	5th International Congress on Developmental Origins of Health and Disease (DOHaD) 6 – 10 November 2007 Perth Convention and Exhibition Centre The NGED ECR committee, in conjunction with the Network Awareness Group, are delighted to be a major congress sponsor for the upcoming 5th International Congress on Developmental Origins of Health & Disease to be held in Perth, Western Australia on the 6th-10th of November. DOHaD is emerging as one of the most significant forms of international research in determining the prevention and treatment of many child and adult illnesses. One of the most impressive selection of world experts will be speaking on a number of topics encompassing the major disciplines of the Network focusing on finding global solutions for the origins of disease. One of the exciting sessions for early career researchers will be a breakfast symposium with Nobel Laureates Professor Barry Marshall and Dr Robin Warren present their career paths from ECR to Nobel Prize winner. The talk entitled "Helicobacter pylori – the origins of a Nobel Prize" will be followed by an open panel question time allowing ECRs a unique opportunity to ask questions of the Nobel Laureates. The conference also incorporates a joint session with the 2007 Epigenetics Scientific Conference, also supported by NGED. DOHaD not only consists of an excellent scientific program, but an exceptional social program consisting of a Melbourne Cup Day Lunch, Barbecue and Social Afternoon and the Gala Dinner. This meeting is a must for all network members, so tell your colleagues, friends and family, and join us in Perth for the DOHaD 2007 conference. For more information, check out www.dohad2007.org.

Please contact the NGED Office if you are aware of any upcoming events that are not yet listed in the NGED Events Calendar.

ATTACHMENT 1

Australian Drosophila Biomedical Research Facility Manager

Postdoctoral Fellow - Fixed Term – 5 years
Academic Level A

Salary Package: $52,672 - $63,561 pa plus 17% super

Reference No.: RSBS4055

The Molecular Genetics and Evolution Group at the Research School of Biological Sciences wishes to appoint a Manager to oversee the establishment and running of a new facility to support Drosophila biomedical research throughout Australia.

This facility, established through an NH&MRC Enabling Grant, will house many thousands of Drosophila stocks and supply them to Australian laboratories. The Manager is expected to have a PhD in genetics or equivalent and will be responsible for the maintenance of Drosophila stocks and stock records, liaising with participating scientists throughout Australia, receiving, recording and responding to requests for stocks and advising Australian researchers on the use of Drosophila as a model organism.

The Manager will supervise a small number of technical staff who will work in the facility. The successful candidate must have a research-level knowledge of and experience in genetics, must be meticulous in the maintenance of genetically defined laboratory stocks and have outstanding organizational and management skills.

The minimum salary for applicants holding a PhD is $59,397.

Further particulars, including selection criteria, are available from:
Virginia Riddle, phone 02 6125 4752, e-mail virginia.riddle@anu.edu.au
or http://info.anu.edu.au/hr/Jobs/Academic_Positions/_PDF/RSBS4055.pdf

If you wish to discuss the position after obtaining the selection documentation, please contact:
Professor Robert Saint, phone 02 6125 2383, e-mail Robert.Saint@anu.edu.au.

Information for applicants http://info.anu.edu.au/hr/Jobs/How_To_Apply/index.asp.

Job Application Cover sheet - http://info.anu.edu.au/policies/Forms/Human_Resources/Recruitment/HR86.asp.

Closing Date: 31 May 2007

ATTACHMENT 2

Investigating the role of Huntingtin in development and disease; a zebrafish model

Amanda L. Lumsden, Tanya L. Henshall, Sonia Dayan, Michael T. Lardelli and Robert I. Richards

ARC Special Centre for the Molecular Genetics of Development; School of Molecular and Biomedical Science, The University of Adelaide, SA

Huntington's disease is one of nine neurodegenerative disorders caused by expansion of CAG repeats encoding polyglutamine in their respective, otherwise apparently unrelated proteins. Despite these proteins having widespread and overlapping patterns of expression in the brain, a specific and unique subset of neurons exhibits particular vulnerability in each disease. It has been hypothesised that perturbation of normal protein function contributes to the specificity of neuronal vulnerability; however the normal biological functions of most of these proteins including the HD gene product, Huntingtin (Htt), are unclear.

To explore the roles of Htt, antisense morpholino oligonucleotides have been used to observe the effects of Htt deficiency in early zebrafish development. Knockdown of Htt expression resulted in a variety of developmental defects. Most notably, Htt-deficient zebrafish had hypochromic blood due to decreased haemoglobin production, despite the presence of iron within blood cells. Furthermore, transferrin receptor transcript levels were increased, suggesting cellular iron starvation. Provision of iron to the cytoplasm in a bio-available form restored Hb production in Htt-deficient embryos. Since erythroid cells acquire iron exclusively via receptor-mediated endocytosis of transferrin, these results suggest a role for Htt in the release of iron from endocytic compartments into the cytosol.

Iron is required for oxidative energy production, and defects in iron homeostasis and energy metabolism are features of HD pathogenesis that are most pronounced in the major region of neurodegeneration. It is therefore plausible that perturbation of Htt's normal role in the iron pathway (by polyglutamine tract expansion) contributes to HD pathology, and particularly to its neuronal specificity.