



Welcome to the Spring 2011 edition of the NRCGD newsletter.

Spring has arrived on cue in Auckland, and hopefully throughout the rest of the country. The second half of 2011 looks to be a busy time for everyone, not just because of the Rugby World Cup taking place around the country.

Since June, the NRCGD has sponsored a number of events, starting with a Farmers' Learning Workshop at Massey University in Palmerston North, then the Biology Educators' Association of NZ (BEANZ) BioLive conference in Auckland in July, and the QMB Development satellite meeting in Queenstown in August. Feedback is that the events were hugely successful, and that the NRCGD received some excellent exposure.

In addition, the 2011 NRCGD Writing Retreat took place in August; nine trainees took part in the week-long retreat. I hear that Prof. David Lindsay worked the participants pretty hard but that everyone learnt a great deal from his no-nonsense approach to scientific writing. After the retreat David was very positive about the manuscripts in preparation and we will look forward to seeing the finalised papers in print in the future.

The next event on the NRCGD calendar is the NRCGD Science Symposium in November; more on that below.

Best wishes

Roger

2011 NRCGD Science Symposium

This year's NRCGD Science Symposium will take place in Dunedin between the 15th and 17th of November. The meeting will be held on the University of Otago campus at St Margaret's College, with out-of-towners accommodated in individual rooms at the College itself. This year Assoc. Prof. Peter Dearden and Dr Liz Duncan (from the Laboratory of Evolution and Development within the Biochemistry Department of the Otago School of Medical Sciences, University of Otago) are taking the lead in organising the symposium; also on the organising panel are Dr Deb Sloboda and Assoc. Prof. Frank Bloomfield – with support from the admin team in Auckland.

We would like to encourage everyone to register their intention to attend as soon as possible. To do this, contact either Trisha Hiestand (t.hiestand@auckland.

ac.nz) or myself (j.duffy@auckland.ac.nz) so that flights to/from Dunedin can be booked (if you intend to arrive/depart Dunedin on days other than the 15th and 17th of November, please make this clear when e-mailing) and accommodation confirmed. For catering purposes, please let us know if you have any special dietary requirements so that we can make the necessary arrangements.

If you live in Dunedin we would also like to know if you are attending the symposium; this is so we can cater for the right number of people (we wouldn't want to run short on food!).

Trisha, Megan and I are all looking forward to meeting/catching up with new and old NRCGD members alike – and excited about visiting Dunedin in spring!

In the media

Several NRCGD investigators have been in the media over the last few months:

- Professor **David Raubenheimer**'s recently published work in *Biology Letters* has attracted a great deal of attention in the international and local media with articles appearing in the *New York Times*, *Irish Times*, *The Dominion-Post* and the *NZ Herald*, to name a few. In addition, David was interviewed on the *Nine to Noon* programme on *Radio NZ National*; that interview can be accessed at <http://www.radionz.co.nz/national/programmes/ninetonoon/20110620>
- Professor **Ian Shaw** appeared in a number of episodes of TV3's season 4 of *What's Really in Our ...?* In addition to episodes listed in the previous newsletter, Ian also appeared in recent episodes on beer, berries, soy, shellfish and beans. These episodes can be viewed at <http://www.tv3.co.nz/Shows/WhatsReallyInOur.aspx>
- In April, Professor **Ian Morison** had his head shaved as part of the Leukaemia and Blood Foundation's 'Shave for the cure' fundraising campaign. Ian raised over \$5700 for the foundation and got a new look to go with it!

Congratulations to ...

- **Alison Paterson** (Chair of the NRCGD Board) was appointed Pro-Chancellor of Massey University in May.
- Prof. **Hugh Blair** (Massey) was elected President of Association for the Advancement of Animal Breeding and Genetics (AAABG). The AAABG is a professional organisation based in Australia and New Zealand for livestock scientists, breeders, educators, students and industry service providers.
- Prof. **Steve Morris** (Massey) was elected president of New Zealand Society of Animal Production at their annual meeting in Invercargill in June.
- Assoc. Prof. **Paul Kenyon** (Massey) was elected Vice-President of New Zealand Society of Animal Production at the same meeting.
- Assoc. Prof. **Peter Dearden** was appointed to the Otago Museum Trust Board as the University of Otago representative earlier this year.
- Assoc. Prof. **Paul Kenyon** (Massey) received the Sir Arthur Ward Award at the New Zealand Society of Animal Production's annual meeting in Invercargill in June. The award recognises the successful application of research or experience to an aspect of animal production in New Zealand.
- In June, **LENScience** successfully launched their new diabetes learning module. This is the first time that LENSscience has launched a full module of work utilising the Connect platform (the platform used for the Year 13 Connect lecture series beamed across the country). To date at least 71 classes, representing 1775 students at schools from Kerikeri to Gore, have participated in this diabetes learning programme.
- Assoc. Prof. **Paul Kenyon**, Prof. **Steve Morris** and Prof. **Hugh Blair** (all Massey) hosted the first of four 1.5-day farmer learning workshop sessions at Massey University in mid-June. This NRCGD-funded initiative is aimed at the future leaders of the industry. Workshop sessions will be spread throughout the year to reflect the various seasonal and physiological states of production animals (breeding, pregnancy, lactation) and plants (active spring growth, reproductive phase and dormancy or slow growth over winter).
- **Phuong Nyugen** (AgResearch PhD student, Hamilton) received a *National Institutes of Health Young Investigator Travel Award* to attend and present at the Congress on Steroid Research in Chicago in March this year.
- **Anirudhha Chatterjee** (PhD student, Dunedin) received the *AGRF Young Investigator Award* for his oral presentation *Genome-Scale DNA Methylation Mapping: Unravelling Inter-Individual Variation* at the Australian Epigenetic Alliance – Victorian Branch Meeting in August.
- Prof. **Mike Dragunow** (Auckland) has recently won two significant grants. He secured a \$4.4 million grant from the Health Research Council Programme to lead a 5-year project titled *Neurodegeneration in the Human Brain – Mechanisms and Therapeutic Targets*. In addition, Mike gained a \$1 million grant from the Hugh Green Charitable Trust to establish a Biobank within the Centre for Brain Research.

- The trainee oral and poster prizes at the QMB Development Satellite meeting went to: best speaker, **Rosannah McCartney** (Otago); best poster, **Ajay Nair** (Otago), and poster runner-up, **Zoe Clayton** (Liggins). Full details are given in the article on page 5.
- **Chanakarn Kiataramkul** (Massey, Albany) successfully defended her PhD in Thailand earlier this year. Chanakarn was co-supervised by Prof. Graeme Wake of Massey University, Albany in conjunction with supervisors at the Mahidol University in Bangkok. Her thesis was titled *Optimal Nutritional Strategies for Mammalian Development: A Systems Approach* and described an algorithm to determine the minimal maternal nutrient intake profile required to achieve a pre-determined birthweight. Chanakarn is now working in Thailand.
- **Pritika Narayan** (FMHS, Auckland) successfully defended her PhD in early August. Pritika's PhD was supervised by Prof. Mike Dragunow and the title of her thesis was *Epigenetic Changes in Alzheimer's and Huntington's Disease: A Semiquantitative Analysis of Histone Changes*. Pritika is now a postdoc in the same lab.
- **Cassandra Yap** (Liggins) has successfully completed her MSc. Cassandra's thesis was titled *Effects of Maternal Fructose Consumption on the Growth and Development of the Fetus and Placenta*; she was supervised by Dr Deb Sloboda and Dr Mark Vickers. Cassandra now plans to undertake a PhD at UWA, Perth.
- **Natalia Martin** (Massey, Palmerston North) has successfully completed her MSc. Natalia's thesis was titled *Ewe Nutrition during Pregnancy: Effects on the Development of Twin Fetuses* and she was supervised by Assoc. Prof. Paul Kenyon (and co-supervised by Prof. Hugh Blair and Assoc. Prof. Patrick Morel). Natalia is now working full time at the Institute of Veterinary, Animal and Biomedical Sciences at Massey University as a research technician.
- **Zoe Clayton** (Liggins) has successfully completed her MSc. Zoe was supervised by Dr Deb Sloboda and Dr Mark Vickers; the title of her thesis was *The Effects of Maternal Fructose Intake on Hepatic Metabolism in Fetal and Neonatal Rat Offspring*. Zoe is currently trying to decide between doing a PhD and travel!
- **Kitty Bach** (Liggins) successfully defended her PhD in September. Kitty was supervised by Assoc. Prof. Frank Bloomfield and co-supervised by Prof. Jane Harding; the title of her thesis was *Novel Concepts in Ventilator-Induced Lung Injury in Preterm Babies*. Kitty has been working full-time as a neonatologist in Auckland City Hospital since last November, and plans to continue research based on the findings of her thesis.

2011 Writing retreat a success

Feedback from participants in August's NRCGD early-career writing retreat has been very positive. This is the second year that the NRCGD have held an early-career writing retreat and attendees have again found the tutorage of Professor David Lindsay, and the peace and quiet of the Vaughan Park Retreat Centre, to be very conducive to writing and thinking about writing.

Retreat facilitator Professor David Lindsay is a popular tutor – despite being a hard taskmaster. David has a very strong background in science communication and a knack for demystifying and simplifying the writing process. While the writing retreat was no walk in the park (David had everyone working flat out all week – within and outside course hours), the participants all found the focused time for writing very rewarding and productive, and felt that the retreat was hugely worthwhile.

Participants came from across the country, with Palmerston North and Dunedin being particularly well represented.

Now that the participants have each drafted a paper we will look forward to seeing them appearing in print!



From right to left – front row: Asmad Kari, Chew-Ling Tan, Pritika Narayan and Lisa Graham; back row: Tim Savage, Prof. David Lindsay, Brielle Rosa, Maria Loureiro, Rosannah McCartney and Jemma Geoghagan (photo courtesy of Lisa Graham).

Confocal microscope

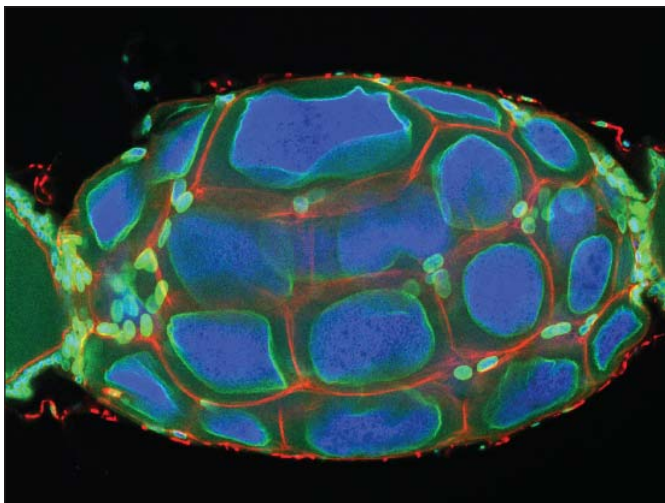
Christmas comes early for the Evolution and Development Lab

The Laboratory for Evolution and Development (headed by Peter Dearden) welcomed a new arrival in July! And the identity of this long-awaited addition to our laboratory? It is a brand-new Olympus Fluoview FV1000 scanning confocal microscope. We were able to obtain this microscope thanks to a major equipment grant from the NRCGD for over \$300,000.

After some intensive training by the Olympus people we have been let loose on the machine and while it is rare to find the machine unoccupied (Peter and Liz have a monopoly), we do occasionally let the students use it (see attached photos). This microscope has been a valuable addition to our laboratory and has allowed us to make significant advances in our research already. If you



NRCGD-funded Masters student Abigail Romeril uses the confocal microscope to examine the structure of honeybee queen ovaries (photo courtesy of Liz Duncan).



Honeybee queen ovary stained with phalloidin (red) to detect cortical actin, DAPI (blue) to detect nuclei and an antibody to detect nuclear membranes (green) (photo courtesy of Liz Duncan).

were at the Queenstown Research Week Development Satellite in early September you may have seen Liz present some really exciting data generated using this microscope.

We are very pleased to have this microscope and would be happy to consult with and host any NRCGD members wanting to do their own experiments using confocal microscopy. If you are interested in knowing more, contact Peter Dearden (peter.dearden@otago.ac.nz) or Liz Duncan (elizabeth.duncan@otago.ac.nz).

Thanks to Liz Duncan for providing the photos and story on the new confocal microscope.

BEANZ BioLive conference

The Biology Educators' Association of NZ (BEANZ) BioLive conference was held in Auckland in mid July. BioLive is a biennial event for all biology educators, including tertiary educators. LENSscience and the NRCGD were the main co-sponsors for the conference which attracted 165 delegates from across the country.

Keynote speakers for the conference included Jacquie Bay (Director of LENSscience and the outgoing president of BEANZ) and Professor Sir Peter Gluckman. A number of seminars and workshops were led by NRCGD members, including Jacquie Bay and Helen Mora (Transitions; Complex science investigations made simple; Classroom investigations take flight; Students make informed choices); Peter Dearden (What: with flies and worms; Everyone loves/hates bees); Susan Morton (Growing Up in NZ: a 21st century longitudinal study); Alan Beedle (Medicine meets evolution). Pania Newton, an alumni of the LENSscience Summer Studentship programme, presented the research she had undertaken during her NRCGD studentship with Professor Sir Peter Gluckman's team earlier this year.

QMB Development Satellite meeting

The second Development Satellite meeting was held September 1–2 at Rydges Resort in Queenstown as part of Queenstown Research Week. The meeting was co-sponsored by the NRCGD and Genetics Otago. Sessions were quite diverse and included fantastic talks from international speakers such as Cassandra Extavour (germ cell specification; Harvard University), Sue Brown (embryonic development in *Tribolium*; Kansas State University), Runlin Ma (RCN3 and respiration failure; Chinese Academy of Sciences), Vicky Prince (neuronal migration in Zebrafish; University of Chicago) and Robert Ho (caudal function in the vertebrate hindbrain and spinal cord; University of Chicago).

One of the highlights of the meeting was the joint session held between the Epigenetics, Bioinformatics and Development satellite meetings. The speakers in this session included Daniel Nettle (Newcastle University) whose talk, *Dying Young and*



Prof. Daniel Nettle speaking to the joint session held between the Epigenetics, Bioinformatics and Development satellite meetings at QMB (photo courtesy of Sarah Morgan).



Assoc. Prof. Frank Bloomfield, Acting Director of the NRCGD, speaking to the joint session held between the Epigenetics, Bioinformatics and Development satellite meetings at QMB (photo courtesy of Sarah Morgan).

Living Fast, certainly stimulated discussion around reproductive strategies in human females and associated adverse life events during childhood. This session was also to include Rebecca Simmons (University of Pennsylvania), but she was unable to attend due to Hurricane Irene. Fortunately Frank Bloomfield stepped into the breach at very short notice and gave a fantastic talk. Frank's talk covered not just a clinical problem, but extended into field experiments in sheep and the possible molecular mechanisms underlying these phenomena. Great job Frank! This session also included Andy Feinberg (Johns Hopkins University School of Medicine, Baltimore) whose talk about DNA methylation and 'shores' around CpG islands in mammals certainly changed the way I think about methylation regulating gene expression (he also talked, with some encouragement from Peter, about methylation in bees!).

The trainee speaker and poster awards for the Development Satellite meeting were almost a clean sweep for NRCGD students. Rosannah McCartney (Dearden lab) was awarded the Best Speaker Award for her excellent talk *Hexamerins are Key Regulators of Caste Development in the Honeybee*, Ajay Nair (Dearden lab) was awarded the Best Poster Prize for his poster *Assimilation of an Acquired Trait: Is there an Epigenetic Rationale?*, and Zoe Clayton (Sloboda lab) was second with her poster *Maternal Fructose Intake during Pregnancy Alters Hepatic Gene Expression and Leads to Sex-Specific Changes in Glucose and Lipid Metabolism in Offspring*.

Overall, the QMB Development Satellite meeting was a fantastic meeting; thanks goes to the NRCGD for their sponsorship and for attracting high calibre of national and international speakers. We look forward to another Development Biology Satellite in 2013!

Thanks to Liz Duncan for providing the text for the story on the QMB Development Satellite meeting.



Assoc. Prof. Peter Dearden with the prize winners from the best trainee speaker and poster competition; left to right, Peter, Ajay Nair, Rosannah McCartney and Zoe Clayton (photo courtesy of Sarah Morgan).



NATIONAL RESEARCH CENTRE FOR
GROWTH AND DEVELOPMENT

NRCGD Science Symposium

Who: NRCGD members and associates

When: Tuesday 15th – Thursday 17th November, 2011

Where: St Margaret's College, University of Otago, Dunedin

Registration: contact Trisha Hiestand (t.hiestand@auckland.ac.nz) or
Jane Duffy (j.duffy@auckland.ac.nz)
for catering, accommodation and flight bookings



St Margaret's College, Dunedin

NRCGD Funding

Purpose	Funding Eligibility	Application Deadline
Postgraduate Scholarships		
This fund is intended to award scholarships on a competitive basis in amounts up to the value of a full 3-year PhD stipend plus fees. PhD Scholarships of more than one-year duration will also include a single allocation of \$5,000 for additional working expenses.	Current or prospective research Masters or PhD students engaged (or expected to be engaged) on an NRCGD-related project are eligible. Applications may be for full- or part-time study for a current student at any stage of their studies, or a funding extension for students in the latter stages of their studies.	Applications can be made at any time. Applications will normally be considered by the Directorate at the first scheduled meeting following submission.
Short-Term Funding		
This is intended to provide support for small-scale research or research-related activities aligned with NRCGD goals. Funding is usually provided up to a maximum of \$20,000 and restricted to activities that can be completed within a 12-month period.	Applications are invited from all NRCGD members. Postdoctoral fellows and PhD students may apply provided an NRCGD investigator is named on the application. Funding is only allocated to current NRCGD members, but funded activities may take place at non-NRCGD locations and may involve non-members.	Applications can be made at any time. Applications are considered at the first Directorate meeting following March 31, June 30, September 30.
Trainee Development Funds		
Funding to support training and professional development activities undertaken by postdoctoral fellows (PDF) and postgraduate students engaged on NRCGD projects.	Applications are invited from all PDF and postgraduate students currently engaged on NRCGD projects. PDFs may be awarded a maximum of \$2,000 for each year of their involvement with NRCGD projects; the level for postgraduate students is up to \$1,500 for each year of study, to a maximum of three years (\$4,500).	Applications can be made at any time. Applicants will normally be advised of funding decisions within 2 weeks of application submission.

Funding application forms can be obtained from Megan Stünzner in the NRCGD Directorate Office (m.stunzner@auckland.ac.nz), or from the NRCGD Sakai website.

Arrivals and Departures from the NRCGD

Since the last newsletter Dr **Kristin Connor** has left the Liggins Institute to return to Canada, and **Michal Denny**, **Shawn Cooper** and **Georgie Hadwen** have left LENSscience. Both Michal and Shawn have returned to secondary teaching within a school environment.

- Welcome to **Leiyang Wang**, a new masters student at Massey University in Albany. Leiyang is supervised by Prof. Graeme Wake and will be working on an NRCGD-funded project that involves developing software to match an algorithm against simultaneous time-series data for fetal weight and current nutrient intake, in order to determine species-specific parameter values.



- And in other news, **Dr Shinichi Nakagawa** is currently on sabbatical in Germany, and he is due back at the University of Otago in early January.

Upcoming events

1st International Conference on Nutrition and Growth

1–3 March 2012; Paris, France

FAOPS & PSANZ Sydney 2012

18–21 March 2012; Sydney, Australia

Send questions, comments, suggestions and contributions (including conference announcements) to us at info@nrcgd.org.nz