



FGCNews



From the FGC Director

We've had a busy few months at the FGC. It was great to catch up with everyone at the annual postgraduate student symposium in July and we were thrilled when Neeta Karve was awarded the prize for the best oral presentation. It was also a busy time for some of the students who presented their confirmation of candidature seminars in the same week. Congratulations to those students who have now successfully had their candidature confirmed.

Following the postgraduate symposium, Saira Hussain and I travelled to the 14th International Rapeseed Congress in Saskatoon, Canada. This congress was attended by about 1000 delegates and talks ranged from the latest biotechnology approaches to alter oil composition to new ways to utilise canola protein. Saira gave an excellent presentation on her work studying bioactive compounds in canola meal. In late July I also attended the Australian Grains Industry Conference in Melbourne, which gave me an opportunity to network with members of the national and international grains industry and catch up with some of our industry partners. In early September I had the opportunity



FGC members enjoying AGSA Conference dinner.

to attend the Westpac Agribusiness Innovation Challenge in Sydney which showcased some innovative projects with the potential to benefit rural Australia. September was also a busy month for conferences with the 12th International Gluten Biotechnology in Perth and the AGSA 65th Australian Cereal Chemistry Conference in Coogee. We had a great showing at the AGSA conference with more than 13 posters and oral presentations. Congratulations to Tabin Brooks for taking out the best student poster award!

Prior to the AGSA conference the FGC took the opportunity to host a workshop on the Australian Grains Industry. The workshop was designed to give new entrants to the industry the opportunity learn about how different grain commodities are produced as well as the importance of their quality. FGC staff and students as well as other new entrants to the grains industry attended the workshop.

The next event being hosted by the FGC is the AIFST Food Science Summer School. This will be held at CSU's Wagga Campus from the 27th to 29th January 2016. We hope to have research students from other Universities and ARC ITTC's so that we can build collaborations with other researchers and centres. At the Summer School, students will have an opportunity to present their research and also hear from key food industry researchers. AIFST will also be providing some professional development opportunities.

Chris Blanchard



Neeta Karve, Rebecca Barnett, Saira Hussein and Chris Floriodes at the FGC Introduction to Grains Workshop.



Confirmation of Candidature seminar and Post Graduate symposium: My experience

By Neeta Karve

The Confirmation of Candidature seminars held on 1st July 2015 was an "eye opener" for me. It was the first opportunity to present my project proposal to the University. I learnt how to convince the audience and demonstrate the need to conduct my research.

The post graduate symposium held from 2nd to 4th July 2015 was a fascinating event with a broad range of projects being presented. Oral presentations were held during the day and I thoroughly enjoyed all presentations given by students who were at various stages of their postgraduate studies. I learnt about presentation skills such as presenting clearly and effectively, connecting with audience and telling a story within a set time. In addition to enjoying a number of interesting sessions at the symposium, I gave an oral presentation and received important feedback from the audience. It was my first time attending this symposium, and I found the whole experience very stimulating. I also had another opportunity to present my work through a poster presentation. I found the postgraduate symposium very useful, both in terms of keeping up to date with current research at CSU and profiting from the networking opportunity. I am very grateful to FGC and CSU that I had this opportunity and feel that attending the postgraduate symposium has greatly aided my own research. The symposium offers a great opportunity to present our work to a friendly and interested audience.



Neeta Karve giving her confirmation of candidature seminar.



Saira Hussain and Professor Chris Blanchard - 14th International Rapeseed Congress.

14th International Rapeseed Congress Saskatoon, Saskatchewan, Canada

By Saira Hussain

In July 2015 PhD student Saira Hussain gave an oral presentation entitled "Bioactive compounds in canola meal" at the 14th International Rapeseed Congress, Saskatoon, Canada. She was awarded a conference support grant from the Graham centre, which provided her with an opportunity to present her research at an international level. Her presentation covered identification and characterization of protease inhibitors, phenolic compounds and their ability to inhibit fat cell development.

Attending the International Rapeseed Congress enabled her to explore different areas of canola agronomy, nutrition and value adding. Saira also had the opportunity to meet scientists from internationally recognised institutes to discuss future collaboration. Saira returned with more knowledge and enthusiasm to explore the many exciting possibilities available in canola research.



Saira Hussain - 14th International Rapeseed Congress.



Rice R&D Workshop, Yanco Agricultural Institute

By Marsa Majzoobi

On the 13th August a one-day workshop was hosted by Rural Industries Research and Development Corporation (RIRDC) Rice Committee at Yanco Agricultural Institute. It began with a welcome from the chair of the Rice R&D Committee; Mr Ian Mason and continued in four sessions with several interesting talks including rice breeding, weed and straw management, data collection, variable rate control, future R&D priorities, rice bran protein, and an insight from former IRRRI employee, Dr Leigh Vial. Professor Chris Blanchard, the director of Functional Grain Centre (FGC), Dr Phil Kerr (senior lecturer of School of Biomedical Sciences), Dr Zhong Kai Zhou (Research fellow of FGC), Dr Mahsa Mazjoobi (Research fellow of FGC) and Esther Callcott (PhD student in FGC) represented CSU at the workshop. In this workshop, Professor Blanchard introduced the new FGC research fellows (Dr Zhong Kai Zhou, and Dr Mahsa Mazjoobi) and their projects including rice grain bioactive compounds and the GI project focusing on developing an *in vitro* method for fast and efficient determination of rice glycemic index (GI). On the following day, Professor Blanchard, Dr Zhou and Dr Majzoobi attended a meeting with Dr Rachelle Ward and Dr Laura Pallas (from NSW Department of Primary Industry) and some academic staff from the University of Western Sydney and Southern Cross University to discuss mutual collaborations on GI. The visit to Yanco was completed with a tour of the rice quality laboratories.



Esther Callcott presented at the Rice R&D workshop at Yanco.

12th International Gluten Biotechnology and 65th Australian Cereal Chemistry Conference

By Prof. Anthony Saliba

I had the pleasure of attending the 12th International Gluten Biotechnology workshop in Perth last month. It was a unique workshop in that there was no core discipline, talks came from growers, breeders, chemists, medical doctors and more. This made for an eclectic collection of opinions, but a core theme was that we just don't know enough about gluten. As a behavioural researcher it helped me realise that if we don't know enough about gluten, we can't be surprised

that consumers are easily misled by celebrity bloggers. Much further research is needed on gluten, particularly the perception of gluten and short-term hedonic responses (both real and perceived), which may be feeding the confusion. The highlight of the workshop for me was the dinner talk by Rod Birch, both for the great insight into farming, and also because right at the point that he was highlighting our political stability in Australia, we changed Prime Minister's! Where were you when that happened? I hopped on a flight to Sydney straight after the workshop and attended the 65th Australian Cereal Chemistry Conference, 'Grains for a Healthy Future' where I presented FGC research on grain quality from a consumer perspective, and touched on the gluten avoidance research we are doing. Most of the other talks were some version of Biochemistry – it was clear to see that the Industry is well served on this front. For me, the two core themes were gluten avoidance again, and innovation. It became clear to me that the industry needs to innovate around the type of grains used and how they are used to make products that consumers demand. In some ways I see a revolution starting, where the consumer will have a much stronger say in what is grown and produced. It's exciting to see this revolution as we are well placed in the FGC to help predict current and future consumer demand, which will ultimately help growers produce grain that neatly fits into a segment, that is, what is grown will be in high demand and therefore command a high price.



Mr Rod Birch, WA grain grower, addresses Gluten Workshop Conference dinner.

12th International Gluten Biotechnology Conference

By Chris Florides

The International Gluten Conference was held in Perth this year and was attended by the world's leading experts on Gluten. Delegates and presenters came from Australia, China, Hungary, the Netherlands, Finland, USA, Mexico, France, Canada, Sweden, Japan, South Africa and the United Kingdom.

It was such a thrill to attend and it could not have come at a better time, to coincide with the start of my research on gluten proteins that cause allergies. I was extra pleased that Chris Blanchard, my principal supervisor and Russell Eastwood from AGT my second supervisor attended, giving



us a chance to catch up and review my research so far. Prof. Anthony Saliba also attended and sat patiently throughout the workshop, taking his frustration on my antique microwave on the last night, terminating decades of faithful service.

On a serious note, I made a lot of contacts and learned a lot on the subject. Presentations dealt with research on issues like gluten functionality, baking properties and quality as expected, but also included a lot of presentations relating to gluten allergenicity. I was pleased to see that my research topic commands such attention in the industry. Talks ranged around gluten free diets, development of wheat varieties with low gliadin content as well as why non gluten sufferers prefer gluten free food. I was especially interested to see that researchers based in the United States are developing wheat without toxic gliadins using genetic engineering. They have already developed lines without some of the most common allergenic epitopes using RNAi methodology. There was a good representation from the baking industry too; covering issues they face mainly on flour functionality in general.

From Past to Present: an overview of the Grain industries of Australia

By Tabin Brooks

The Introduction to Grains Workshop run by the Functional Grains Centre attracted both students and industry professionals and provided an opportunity for them to enhance their knowledge of the Australian Grains Industry. The workshop was held prior to the Australasian Grains Science Association Conference and covered each of the major grain industries that form the backbone of Australia's grain export industry. We learned about the history of the grains industry in Australia, how wheat is graded and also received an overview of the rice, oilseed, barley and oat industries. Speakers included Laura Pallas from the Yanco Agricultural Institute, Chris Blanchard from the Functional Grains Centre, Hugh Robertson from Wheat Quality Australia and Roslyn Jettner from the Australian Export Grains Innovation Centre, and other industry experts.



Guest Speaker, Laura Pallas at the FGC Introduction to Grains Workshop.



Prof Chris Blanchard, Frank Bekes, Anthony Saliba and Chris Floriodes at the 12th International Gluten Biotechnology Conference.

A Visit to Victoria!

By Robert Taylor

In early August, I visited Victoria along with Dr Ed Clayton (NSW DPI Livestock Research Officer, Ruminant Nutrition), and Mr Richard Meyer (Analytical Chemist, NSW DPI Feed Quality Service). A visit was made to SGE Analytical Science to discuss technical details of the use of SGE GC columns, inlet liners and methods as employed in the NSW DPI FQS laboratory in the analysis of fatty acid methyl esters.

Additional visits were made to the CSIRO nutrition laboratory and the commercial animal feed testing laboratory, Feed Test, at Werribee. These visits allowed us to discuss livestock feeds and testing methodology and equipment.

Finally, the AFIA (Australian Fodder Industry Association) conference was attended.



Roderick Williams, Richard Meyer, Rebecca Barnett, Ed Clayton and Rob Taylor.



65th Australasian Grain Science Association Conference, Coogee

By Siong Tan

The 65th Australasian Cereal Chemistry Conference provided the latest updates on grain science research through a series of workshops and presentations. My oral presentation (Glucosinolate and its Breakdown Products in Australian Canola and Non-canola Grade Meal Proteins) was well received by the delegates at the conference. Comments and suggestion from experts were deemed valuable as the findings are currently being prepared for publication. The conference was of great importance as part of the development in my postdoctoral fellow research experience.

Grains for Health, Grains for Industry, and Grains for the Future were the main program themes. The conference provided an exciting platform to promote the Functional Grain Centre to the conference delegates most of which were from the grains/cereal science research area. The line-up of the talks included topics on grain quality, nutritional and anti-nutritional constituents, health, and processing, all of which are highly relevant to my research area. Comments and suggestions from the conference should help in further improvement of my current research project. Meeting with people during the conference assisted in building my professional network and provided me with the possibility of developing new research collaborations.



Oral presentation by Siong Tan at the 65th Australian Cereal Chemistry Conference.

2016 AIFST FOOD SCIENCE SUMMER SCHOOL

27 - 29 January 2016

Charles Sturt University,
Wagga Wagga NSW

For more information:

<https://www.aifst.asn.au/>

Functional Grain Centre partners and collaborators



Contact:



ARC Industrial Transformation Training Centre for Functional Grains,

A Charles Sturt University, Wagga Wagga NSW 2650

P (02) 6933 2364 E fgc@csu.edu.au Twitter @FGC_Admin

Prof. Chris Blanchard

P (02) 6933 2364 E cblanchard@csu.edu.au Twitter @FGC_Chris