



# FGCNews



## From the FGC Director

Despite having a well earned break over the Christmas period the FGC staff and students have been busy over Summer. It was with great excitement that we celebrated the graduation of three of our students: Miss Meg Ryan, Dr Saira Hussain and Dr Soumi Mukhopadhyay. Meg graduated with BHealthSc(Nut&Diet)(Hons) and has now taken up a position as a practicing dietician. Soumi graduated with her PhD and will soon start in a new sensory scientist position with Goodman Fielder. Saira also graduated with her PhD and has also recently "tied the knot". Speaking of important milestones, congratulations to Esther Callcot on the arrival of her baby girl, Caitlin.

January 2016 marks the beginning of the International Year of the Pulse. To celebrate the commencement of IYP2016 our Werribee team celebrated with a pulse feast. Other IYP activities that FGC staff are participating in include a Health and Nutrition forum in May and a National Pulse Conference in September. We also have two teams entered in the AIFST pulse product development competition which will be judged at the Annual AIFST conference in June.

The major activity for the FGC this summer was the hosting of the AIFST Summer School. The summer school provided an opportunity for food science postgraduate students from around the country to interact with food industry professionals and present updates on their research. Well done to all the FGC students who presented at the workshop. Many thanks go particularly to Sharron Sharrock and Prof. John Mawson for all the work they put into organising this event. The Summer School also provided an opportunity for the FGC External Advisory to have their first face-to-face meeting.

FGC members have also been attending other workshops and events recently. Kyle Reynolds was recently invited to give a presentation on his work at the Wagga Wagga GRDC Research Update. Daniel Skylas and Siong Tan attended a

commercialisation workshop with our colleagues from the University of Queensland based ARC ITTC. Dr Pdraig Strappe also visited Dr Zhou Kai Zhou's colleagues at the Tianjin University of Science and Technology in China.

We are fortunate to have input from some international visitors at the moment. We currently have Dr Woo Won Kang from Korea and Ms Bushra Javid from Pakistan working with us. We recently farewelled Dr Saqlan Naqvi who has returned to Pakistan and we have welcomed Mr Hung Liu who is a PhD student from China who will spend 1 year with us.

We are also welcoming 3 new students to the FGC. Drew Portman has commenced a project based in Victoria working on bioactive compounds in lentils. Shiwangni Rao has recently commenced a project in Wagga studying the impact of environment on grain quality. Annie Riaz will also commence soon studying the functional properties of low Gliadin wheat lines.

**Chris Blanchard**

## GRDC Grains Research Updates Forum

**Kyle Reynolds**

I was recently invited to present part of my research at this year's GRDC grains research updates forum, held at Wagga Wagga on the 16th-17th February. This provided me with a great opportunity to think about the directions of my research and how it relates to the 'real world', something that is not often considered while completely focused on the experimental aspect of the work. I had the opportunity to both present and discuss my work with people from various professions, including farmers, agronomists, researchers and industry representatives. Over the two days, it was also a good chance to maintain current networks and also begin the development of new ones. Listening to presentations directly from the farms provided insights into the difficult decisions associated with choice of crops, sowing and harvest periods, and also challenges that are often encountered.



## Profile - Sabrina Wang



Hello everyone, my name is Sabrina Wang. I would like to take this opportunity to introduce myself. I came from China and I am now marching into the second year of my PhD journey and the eighth year of living in this "lucky country". My PhD project involves investigating the antioxidant and functional properties of Australian rice bran and I am at the stage of screening the major antioxidants in Australian rice varieties.

Before I entered the science world, I worked in the fields of marketing, sales, product development and management consulting at multinational corporates for over a decade. I have to say that I have had pretty awesome career development in those roles as I think these are the areas that happen to fall into my comfort zone.

However, I also believe that life is not just about doing what you are comfortable with, but also about doing something for which you have a passion. That is exactly why I chose to almost completely restart my career in a new field, a field that I might not be very good at yet, something I have the passion for, that is Food and Nutrition Science.

I wish to say thank you so much to FGC and all the great FGC folks for this wonderful opportunity they offered me. Outside of the academic world, I am also a maniac marathon runner and traveller, an enthusiastic cook, a small Pilates studio owner here in Sydney and a passionate environmental protection advocate.

## International Day of the Pulse

By **Rebecca Barnett**

FGC postgraduate students Rebecca Barnett, Neeta Karve and post-doctorate Siong Tan took the 'Pulse Pledge' and organised a 'Pulse Feast' 6 January 2016. The global social media campaign - reaching over 7 million people - was organised to raise awareness of the value of pulses and launch of 2016 as International Year of Pulses.



## Rebecca Barnett

Blink and you'll miss it! A FGC postgraduate student, Rebecca Barnett, featured in the Australian Government's National Innovation and Science Agenda: Welcome to the Ideas Boom TV commercial. Rebecca's participation was a unique opportunity to inspire other Australians to turn their ideas into successful products, in addition to pursuing careers in science, technology, engineering and mathematics.

Image courtesy of [www.innovation.gov.au](http://www.innovation.gov.au)



## Commercialisation Workshop

By **Daniel Skylas**

In early February, Siong Tan and Daniel Skylas travelled to Brisbane to attend the Agents of Change Industrial Transformation Training Centre Research Commercialisation Workshop, conducted by the University of Queensland's Business School. The workshop was also attended by a number of PhD students based at UQ involved in a diverse range of research in the agricultural and food science fields.

The main objective of this workshop was to provide the knowledge and tools to develop strategies for commercialising research and creating value. The first three days of the workshop were theory-based, lots of coffee was consumed, as we learnt about the principles behind innovation management and commercialisation and everything in between! There was particular focus on innovation, strategy, new product development, intellectual property, markets and finance. The case studies discussed helped put things into perspective in terms of how important innovation management and commercialisation can be! The last two days of the workshop was more about putting theory into practice, there were lots of questions and discussions and an excellent array of speakers from various parts of the industry sharing their ideas and knowledge.

All in all, it was a long intense week of learning but very interesting and rewarding.





## AIFST Summer School 2016

By Michelle Tourtini

This year, CSU Wagga Wagga was the first rural university to host the Australian Institute of Food Science Technology (AIFST) Summer School. A colourful 3-day program was arranged by three food passionate academics: Professor of Food Engineering, John Mawson, Lecturer in Food Technology, Dr Asgar Farahnaky and Director of the Functional Grains Centre, Prof. Chris Blanchard. Student participation and networking in a small-scale, relaxed environment was the winning formula for the 2016 Summer School. It was an especially unique opportunity for visiting students to witness the close ties that CSU students often have with both the agricultural and food industries.

As a new student at Wagga Wagga, I had the great privilege to represent the FGC as a local student media spokesperson. Just before the Summer School began, Chris, myself and a visiting student were interviewed by two local television stations WIN and Prime to promote the AIFST Summer School, the FGC and our particular projects. The final “rodeo” was a radio interview on the last day of the Summer School. Chris and I were featured on ‘Mornings’ with Simon Wallace (ABC Riverina radio) where we spoke of the importance of scientific research for farmers and the general community.

There were many excellent presentations by students and industry keynote speakers throughout the Summer School that were categorised by themes: ‘Food physics, chemistry and functionality’; ‘grains and pulse processing’, ‘good biotechnology’ and ‘allergens’. Bronwyn Graham, the Continuing Professional Development Program (CPD) Coordinator, also gave a particularly engaging/ entertaining speech on AIFST career support for members.

Many students agreed that the tours were one of the highlights of the Summer School. On day one of the Summer School, following afternoon tea, there were tours of the NaLSH labs (teaching area, PC1 and PC2). The tours were conducted by Charmaine, Esther, Clare and myself. Although some visitors did not have the appropriate footwear that was required for entry, the glass windows surrounding the labs gave them a pretty decent view. On day two of the Summer School, we had the choice of two tours: the Canola Mill factory or the NSW Wagga DPI. Since I already worked at the DPI, I decided to take the Canola Mill tour. When we got to the factory, we were provided with hard hats, fluoro vests and safety glasses. The first thing I noticed about the place was the strong smell. It lingered in my nose longer than desired. The factory itself was larger than I expected, with multi-level



AIFST Summer School - FGC Team



mesh floors and kilometres of pipe work. All processes were carefully monitored by computer technology, requiring very few workers at one time.

Besides morning tea, afternoon tea and lunch, we were given the opportunity to socialise during the BBQ dinner on the first day. Unfortunately the swimming pool activity which was scheduled in the afternoon was cancelled in the morning due to rainy weather. Though in true Wagga-style, the sun came out to play in the afternoon anyway.

The formal dinner on the second day was another chance to network with peers and industry folk. Also on this night, Ingrid Appelqvist from the CSIRO gave a very passionate presentation on the future of research in the food industry. She emphasised the importance of innovation and painted a very bright future for the Australian Food Industry and its food scientists. This to me was the greatest highlight of the Summer School.

## New Arrivals - Drew, Shiwangni and Annie

### Qura tul Ain Riaz

I am Qura tul Ain Riaz from Pakistan. I came to Australia in 2014 to join my husband who has nearly finished his PhD from CSU. I applied for a PhD scholarship and was lucky enough to get it. I am a food technologist by training and will be working on quality improvement of bread using low gluten wheat flour. This project is specially designed to cater for the needs of people who are sensitive to wheat so they can enjoy good quality bread without compromising their health. I am really hopeful and looking forward to the outcome of my research.

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### Drew Portman

I'm Drew Portman, and I am a new CSU/FGC PhD candidate. I completed a degree in Biomedical Science in 2014 and an honours degree in Applied Science in 2015 (University of Ballarat). My PhD research topic is characterising the composition of Australian red lentils as well as their by-products. This is a bit of an honour for me considering 2016 is the year of the pulse. To date my expertise has been in fermentation and brewing studies, but I am now realising the idea of becoming a walking dictionary on legumes and lentils. I am very much looking forward to being a part of CSU and the FGC team.

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### Shiwangni Rao

I am from Fiji, I moved to Melbourne Australia in February 2015 and worked for Federation University previously known as Ballarat University. I joined FGC as a PhD candidate early this year and I am currently based at Charles Sturt University Wagga campus. I had completed my Bachelors and Masters at the University of the South Pacific in Fiji. Doing my PhD through the Functional Grains Centre not only allows me the opportunity to advance my studies in an environment that is more integrated with the industry and has a great support network at the University. My research project is looking at the impact of microclimate on cereal grain quality and value adding to cereals by exploring their health benefits.

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## New FGC Member

The FGC has a new member to add to its ranks. Caitlin Eve was born on 15.12.2015 weighing 3.3kg. She is the brand new daughter of Esther Callcott who is a PhD student studying the health benefits of coloured rice. Caitlin is a wonderful baby and is doing exceptionally well. She is much more relaxed and easy going than her older brother Joshua (3 years old).

Caitlin is the first girl to be born into the family in 30 years, so her arrival is a very special occasion to the family. She is much loved by her brother and they get along very well. Whilst Esther is on maternity leave, she continues to do small amounts of work in her spare time.



Brother Joshua looking after his little sister Caitlin



## and a Wedding

"In mid-February 2016, Saira surprised everyone in the FGC by marrying a man from Pakistan by the name of Amir Shams. Amir just finished his studies from the University of Sydney in the field of professional accounting, and works as a trainee accountant in Newcastle. Saira and Amir met through their mutual friends as they were school fellows back in Pakistan. Amir came to Wagga Wagga and proposed Saira to marry her. It was a hard decision for Saira and Amir, but Saira found him a perfect match for herself. However, they were not able to find any Islamic celebrant in Wagga Wagga. Therefore, with the effort of her Co-Supervisor Dr Ata-Ur-Rehman they were officially married in an Islamic religious ceremony of NIKAH held at Bankstown, Sydney, and had dinner at Harris Park Hotel, Sydney.

A wedding celebration was held at Country Curry House, Indian Restaurant, Wagga Wagga on 13th March 2016.



Louise and Chris Blanchard, Saira and her new husband.

properties, as well as antihypertension, antidiabetic and antilipase activities. In addition, an in vitro system was used to assess antiadipogenic activity employing C3H10T1/2 stem cells.

I worked as a Research associate and visiting Lecturer in Pakistan and demonstrator at Charles Sturt University. I am also involved in academic demonstration in Biochemistry, Chemistry, Microbiology, and Haematology at CSU. I am always keen to participate in student activities and have been a member of Rivcoll Student Representative Committee (SRC) since 2012 as a Health officer, Women's Equity officer, Vice President and currently as Postgraduate and Distance education officer. Currently, I am volunteering as a representative for the international student association party for Wagga Wagga at Charles Sturt University.

I look forward to engaging in further opportunities to utilize my capabilities to enhance the industry.



Professor Chris Blanchard, Dr. Ata Rehman and Saira Hussein at Saira's graduation.

## Graduands - Saira, Meg and Soumi

### Saira Hussein

I recently submitted my PhD thesis on Bioactive compounds in canola. I came all the way from Pakistan to accomplish my dream in July 2011. I was supervised by Professor Chris Blanchard, Dr Ata Rehman, Dr Padraig Strappe, Dr David Lockett and Dr Hassan Obied. I obtained my Masters and MS degrees in Biochemistry from the University of Arid Agriculture in Pakistan. My PhD was funded by Faculty of Science Research Higher degree Scholarship from CSU.

My current research interests are the identification of high value compounds for health benefits. My PhD project aimed to characterise the phenolic compounds (PC) and protease inhibitors (PIs) from canola meal extracts (CMEs) and assess their potential bioactivities. Both qualitative and quantitative analyses were employed for the determination of PI activities and total phenolic contents (TPC). Furthermore, the bioactive properties of the CMEs were studied, focusing principally on antioxidant and chemopreventive (topoisomerase inhibition)

### Megan Ryan

Completing my honours has taught me so much about the world of research and gave me the perfect platform to start my career as a dietitian. My honours project involved



Professor Chris Blanchard and Meg Ryan at Meg's graduation.



looking at the effect of cooking on the antioxidant content of coloured rice varieties. My honours has helped me to further understand nutrition chemistry through looking at coloured rice as a functional food. I also learnt so much more about the food industry in Australia and food processing which I am very grateful for. The big picture lesson I learnt from my honours was a greater appreciation for the massive amount of effort, time and passion that all researchers, in every field, put into their work. As a dietitian there is a large emphasis on evidenced based practice and this newfound appreciation has given me a new perspective.

I finished my honours project and graduated from a Bachelor of Health Sciences (Nutrition and Dietetics) (Honours) in December 2015. I have since moved to Dubbo NSW and commenced work as a rural outreach Dietitian. My role involves traveling to a number of towns in Western NSW to provide individual dietetic consultations and health promotion.

## Soumi Graduation

PhD graduation- Journey from India to Australia- Dr. Soumi Paul Mukhopadhyay

My PhD research focused on eliciting consumer preferences for different ways of cooking chickpeas in Australia, which have both technological and economic benefits to the Australian pulse industry. This particular pulse has diverse uses in varieties of recipes, such as snacks, savoury, sweets and as part of the main meals. Coming from India, which is the world leader in production and consumption of chickpeas, my research has enabled me to contribute significantly to improve the quality of Australian chickpeas. As I was born and brought up in India, chickpea was part of my regular diet. My previous knowledge of using and eating chickpeas in everyday diet has helped me enormously to steer the project in the right direction in relation to sensory perception and consumer insights. My project had direct benefits to Australian farmers, through a better understanding of what makes chickpeas desirable to consumers and higher prices for better quality chickpeas.

By saying that, all did not go well during my PhD. In my first year of study (2012), my primary supervisor A/Prof Samson Agbola passed away unexpectedly. This was a difficult event for me to overcome as there was a substantial loss of momentum in the project due to the considerable leadership that Samson was providing in the project team. Instead of backing down, I decided to stay put and move forward with the PhD by showing resilience and professionalism that my supervisory team has expected. I believe that I have been able to respect the memories of late A/Prof Samson Agbola by completing my PhD within 3 years (2012-2015) and proudly graduated on 17th Dec, 2015. It was a proud moment for me and my family, as my parents travelled from India to personally experience the graduation ceremony in CSU. My proud husband and son also accompanied me in this event. I am also thankful to my supervisory team- A/



Soumi was very pleased to have her parents come all the way from India to celebrate her graduation.

Prof Paul Prenzler, Profs Chris Blanchard and Anthony Saliba, Dr. Jennifer Wood (DPI). After successfully completing my PhD journey, now I am working with Goodman Fielder Pty Ltd as Sensory Technologist for Australia and applying my knowledge and expertise in Sensory and Consumer science acquired from my PhD.

## CSIRO Industry Tour

By Rebecca Barnett

On Wednesday 3rd Feb FGC postgraduate Rebecca Barnett and post-doctorate Siong Tan joined the CSIRO Food and Nutrition Flagship Industry Tour. The day initially consisted of visiting Tatura Milk Tatura Milk Industries where manufacture of premium cream cheese and dry milk powder products predominated. After savouring Tatura's award winning Vanilla Slice and travelling through kilometres of fruit orchards, the group visited SPC Ardmona in Shepparton VIC. Rebecca and Siong were fortunate to experience the factory in high season, and sample a new-to-market dessert product.



Rebecca Barnett (3rd left) and Siong Tan (4th left) with the CSIRO Food and Nutritional Flagship Industry Tour





## Functional Grain Centre partners and collaborators



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