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**Program**

**AAGB-2015**

*8th International Conference of the Peanut Research Community*

*Brisbane, Australia*

*November 4 – 7, 2015*

**Organized by:**

The Peanut Foundation

The Peanut Company of Australia

**Organizing Committee**

**Chair**: Graeme Wright, Australia

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 David Bertioli, Brazil

 Xinyou Zhang, China

 **Secretary**: Tom Stalker, USA

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 Baozhu Guo, USA

 Sachiko Isobe, Japan

 Soraya Bertioli, USA

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 Corely Holbrook, USA

 Xuanqiang Liang, China

 Boshou Liao, China

 Victor Nwosu, USA

 Rajeev Varshney, India

 Xingjun Wang, China

 Shanlin Yu, China

 David Hosington, USA

 **Local Arrangements Committee**

 **Chair:** Dan O'Connor

 **Members**: Graeme Wright

 Toni Cohen

 Rao Rachaputi

 Ruth Wright

 Kylie Wenham

**Notes**

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**PROGRAM HIGHLIGHTS**

**Wednesday, November 4**

15:00 PGI Meeting

16:00 – 18:00 Poster Set-up

16:00 – 18:00 Registration

**Thursday, November 5**

07:30 – 12:00 Registration

08:30 – 10:00 Session I: Inauguration

10:00 – 10:30 Tea/Coffee Break

10:30 – 12:00 Session I (cont.)

12:00 – 13:30 Lunch

13:30 – 15:10 Session II: The Peanut Genome Project

15:10 – 15:45 Tea/Coffee Break

15:45 – 17:00 Session II (cont.)

19:00 – 21:00 Dinner, Rydges Hotel

**Friday, November 6**

08:30 – 10:10 Session III: Genetic Trait Mapping & Gene Discovery

10:10 – 10:45 Tea/Coffee Break

10:45 – 12:00 Session III (cont.)

12:00 – 13:30 Lunch

**Friday, November 6 (cont.)**

13:30 – 15:10 Session IV: Genetic Trait Mapping & Gene Discovery

15:10 – 15:45 Tea/Coffee Break, View Posters

15:45 – 17:00 Session IV (cont.)

18:30 – 21:30 Optional Social (Barefoot Bowls)

or dinner on your own

**Saturday, November 7**

08:30 – 10:15 Session V: Crop Improvement

10:15 – 10:45 Tea/Coffee Break, View Posters

10:45 – 12:30 Session VI: The Path Forward

12:30 – 14:00 Lunch

14:00 – 15:30 Session VI: (cont.)

15:30 – 16:00 Tea/Coffee Break

17:00 – 22:30 Outback Spectacular

 **Sunday, November 8**

Bus tour to Peanut Company of Austalia, Kingaroy

Bunya Mountains National Park

 **Monday, November 9**

 Kingaroy Peanut Tour (cont.)

**TECHNICAL PROGRAM**

**Thursday, November 5**

**Session I: Inauguration**

*Chairpersons: Graeme Wright and Steve Brown*

**08:30 Welcome ………………………………………………………………….**Graeme Wright

**08:35 Welcome & Inaugural Addresses** ……………………………………. Ian Langton

**09:00** **The role of the International Peanut**

**Genomic Initiative in conquering starvation** ………….Howard Valentine

**09:30 Group Picture**

**10:00 Break**

**10:25 Introduction of Key Note Speaker**

**10:30** **The road from sequence to consequence: how we are extracting value from genomics to support the sorghum breeding program**………………………………………………………………….………..Emma Mace

**11:15** **Integrating phenomics and genomics in delivery of wheat lines enriched for alleles with improved transpiration efficiency**..........................................................................Greg Rubetzke

**12:00 Lunch**

**Session II: The Peanut Genome Project**

*Chairpersons: Xinyou Zhang and Mark Burow*

**13:30 Analysis of the diploid and tetraploid *Arachis* genomes**

S.A. Jackson\*, D. Gao, D.J. Bertioli, S. Leal-Bertioli, R. Schmitz, and P. Ozias-Akins

*\*The University of Georgia, Tifton, USA*

**13:55** **Recombination between the A- and B- subgenomes has generated genome diversity in cultivated peanut**

D. Bertioli\*, B. Abernathy, S. Leal-Bertioli, K. Shirasawa, and S.A. Jackson

 *\*Catholic University, Brazil and University of Georgia, Tifton, USA*

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**14:20** **Next generation genomics, genetics and breeding in peanut**

R.K. Varshney

*International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Hyderabad, India*

**14:45** **Gene expression profiling in cultivated peanut: Putative gene functions and candidate gene discovery**

 P. Ozias-Akins\*, J. Clevenger, Y. Chu, L. Guimaraes, T. Maia, W. Huang, M. Duke, B. Scheffler, and S. Cannon

 *\*Institute of Plant Breeding, Genetics & Genomics, University of Georgia, Tifton, USA*

**15:10 Break**

**15:45 Development of high density 60K “Axiom\_*Arachis*” SNP Chip and optimization of genomic selection model for enhancing breeding efficiency in peanut**

M.K. Pandey\*, G. Agarwal*,* A. Rathore, P. Janila, H.D. Upadhyaya, J. Clevenger, S. Jackson, X. Liang,P. Ozias-Akins, and R.K. Varshney

 *\*International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Hyderabad, India*

**16:10** **Identification of large-scale SNPs for development of a 60 K SNP array in groundnut**

J. Clevenger\*, C. Chavarro, B. Abernathy, G. Agarwal, M. Pandey, D. Bertioli, S. Jackson, R. Varshney, and P. Ozias-Akins

 *\*University of Georgia, Tifton, USA*

**16:35** **Transcriptome analysis of a peanut seed coat mutant and its wild type reveals expression coordination of ligin and flavonoid pathways in peanut seed coat development**

L. Wan, Y. Wu, B. Li, Y. Lei, L. Yan, H. Jiang, X. Ren, Y. Chen, X. Zhou, L. Huang, R.K. Varshney, and B. Liao\*

*\*Oil Crops Research Institute of Chinese Academy of Agricultural Sciences, Wuhan, Hubei, China*

**19:00 Dinner (included in registration)**

**Friday, November 6**

**Session III: Genetic Trait Mapping & Gene Discovery**

*Chairpersons: Baozhu Guo and Manish Pandey*

**08:30** **Using PeanutBase: features, examples, and tips**

S. Cannon\*, W. Huang, E.K.S. Cannon, S. Dash, S. Kalberer, L. Ren, N. Weeks, J. Dickerson, P.E. Umale, and A. Farmer

 *\*USDA-ARS, Ames, USA*

**08:55** **Identification of QTLs for use in marker assisted selection in peanut breeding**

 C.C. Holbrook\*, P. Ozias-Akins, Y. Chu, T.G. Isleib, J. Clevenger, C. Chavarro, S. Jackson, A. Culbreath, T. Brenneman, C. Chen, C. Butts, M. Lamb, T. Sinclair, A. Shekoofa, B. Tillman, M. Burow, and B. Guo

*\*USDA-ARS, Ames, USA*

**09:20 Differential expression during seed and pod biogenesis through RNA-Seq analysis**

C. Chavarro\*, P. Ozias-Akins, S.A. Jackson, B. Abernathy

 *\*University of Georgia, Tifton, USA*

**09:45 RNAi-mediated control of aflatoxins: Method to assess effectiveness in peanut; Workflow to study genetic diversity of aflatoxigenic *Aspergillus***

 R.S. Arias\*, P.C. Faustinelli, and V.S. Sobolev

*\*USDA-ARS-National Peanut Research Laboratory (NPRL), Dawson, USA*

**10:10 Break**

**10:45** **Identification and utilization for resistance to aflatoxin in peanut**

B. Liao\*, Y. Lei, H. Jiang, L. Yan, X. Ren, L. Wan, Y. Chen, X. Zhou, H. Wang, and L. Huang

 *\*Oil Crops Research Institute of Chinese Academy of Agricultural Sciences, Wuhan, Hubei, China*

**11:10** **Use of genomics for breeding for tolerance to water deficit stress in peanut**

M.D. Burow\*, M.G. Selvaraj, J. Chagoya,  J.L. Ayers, V. Belamkar, R. Chopra, P. Sankara, B.Z. M'bi, and C.C. Holbrook

 *\*Texas A&M AgriLife Research, Lubbock USA*

**11:35** **MABC and MAS enabled breeding of early maturing peanuts with high oleic and resistance to diseases**

P. Janila\* R.K. Varshney, M.K. Pandey, M.T. Variath, Y. Shasidhar, S.S. Manohar, T. Radhakrishnan, N. Manivannan, K.L. Dobariya, R. Vasanthi, S.K. Bera, M.K. Vishwakarma, H.L. Nadaf, and N. Premalatha

 *\*International Crops Research Institute for Semi-Arid Tropics (ICRISAT), Pathancheru, Telangana, India*

**12:00 Lunch**

**Session IV: Genetic Trait Mapping & Gene Discovery**

*Chairpersons: Kelly Chamberlin and Rajeev Varshney*

**13:30 Association mapping of SSR markers to leaf spot and TSWV resistances in cultivated peanut**

Y.Y. Tang, C.Y. Chen\*, P.M. Dang, A. Hagan, K. Bowen, and G. He

 *\*Dept. of Crop, Soils and Environmental Sciences, Auburn University, Auburn, USA*

**13:55 RNA-Sequencing to understand mechanisms of drought stress acclimation response in peanut roots.**

K.R. Kottapalli, S. Arun, P. Kottapalli\*, D. Rowland, and P. Payton

*\*Plant Stress & Germplasm Development Laboratory, USDA-ARS, Texas Tech University, Lubbock, USA*

**14:20 Transcriptome analysis of *Aspergillus flavus* reeveals isolate specific gene profiles in response to oxidative stresses and carbon sources in vitro**

J.C. Fountain , S.N. Nayak, M. Pandey, V. Kumar, P. Bajaj, A.S. Jayale, A. Chitikineni, L. Yang, B.T. Scully, R.D. Lee, R.C. Kemerait, R.K. Varshney, and B. Guo\*

 *\*USDA-ARS Crop Protection and Management Research Unit, Tifton, USA*

**14:45 Molecular analysis of rosette resistance in groundnut crosses by reversed transcriptase polymerase chain reaction**

A. Usman\*, S.K. Offei, E. Danquah, K. Ofori, S.G Ado, M.F. Ishiyaku, and C.A. Echekwu

 *\*Department of Plant Science, Institute for Agricultural Research, Ahmadu Bello University, Zaria, Nigeria*

**15:10 Break**

**15:45 Hi-Oleic peanuts improve biomarkers of cognitive, vascular and cardiometabolic health in middle aged adults**

A.M. Coates\*, J.A. Barbour, J.D. Buckley, J. Bryan, and P.R.C. Howe

 *\*Alliance for Research in Exercise, Nutrition and Activity, University of South Australia; Adelaide, Australia*

**16:10 Phylogenetic relationship of peanut germplasm as revealed by tGBS**

X. Zhang\*, B. Huang, F. Qi, L. Miao, L. Shi, W. Dong, and F. Tang

 *\*Industrial Crops Research Institute, Henan Academy of Agricultural Sciences / Henan Provincial Key Laboratory for Oil Crops Improvement / Key Laboratory of Oil Crops in Huanghuaihai Plains, Ministry of Agriculture, Zhengzhou, China*

**16:35 Evaluating chloroplast markers for *Arachis* phylogeny at low taxonomic levels and DNA barcoding**

J.L. Dilly\*, L. Ramos da Mata, M. de Carvalho Moretzsohn, and J.F.M. Valls

 *\*University of Brasilia, Brasilia, Brazil*

**Dinner on your own**

**Saturday, November 7**

**Session V: Crop Improvement**

*Chairpersons: David Bertioli and Barry Tillman*

**08:30 Breeding of high oleic, early maturing peanut varieties for the Australian peanut industry**

G.C. Wright\*, D. Fleischfresser,L. Owens, A. Cruickshank, and D. O’Connor

 *\*Peanut Company of Australia, Kingaroy, Australia*

**08:45 Physiological analysis of yield improvement of ultra-early peanuts in variable rainfed production environments of Australia**

Y. Chauhan\*, R.C.N. Rachaputi, S. Krosch, and G. Wright

 *\*Depart. Agric., Fisheries and Forestry, Kingaroy, Australia*

**09:00 Peanut varieties for coastal areas of Andhra Pradesh, India**

V.S.G.R. Sunnam

*Agric. Res. Sta., Yellamanchili-531055, Visakhapatnam Dist., A.P., India*

**09:15 The success story of Kadiri 6: A high yielding early maturing groundnut variety suitable for semiarid regions of India**

K.R. Reddy\*, K.S.S. Naik, A. Prasanna Rajesh, B. Santosh Kumar Naik, K. Vemana, E. Chandrayudu, and C. Prathyusha

 *\*Agricultural Research Station, Acharya N G Ranga Agricultural University, Kadiri-515591, Andhra Pradesh, India*

**09:30 K1454 red: A high yielding, high oil, early maturing, multiple resistant, Virginia bunch groundnut variety developed for semi-arid tracts of India**

K.S.S. Naik\*, A. Prasanna Rajesh, B. Santosh Kumar Naik, K.R. Reddy, K. Vemana,  E. Chandrayudu, and C. Prathyusha

*\*Agricultural Research Station, Acharya N G Ranga Agricultural University, Kadiri-515591, Andhra Pradesh, India*

**09:45 Opportunities for marker assisted selection in the University of Florida peanut breeding program**

B.L. Tillman\*

*\*University of Florida, Gainesville, USA*

**10:00 Effect of weather parameters on development and progress of late leaf spot (*Phaeoisariopsis personata*) disease in groundnut**

A. Pappachan, R.S.J. Devil\*, and S. Sonyal

 *\*Department of Plant Pathology, S.V. Agricultural College, Tirupati, Andhra Pradesh, India*

**10:15 Break**

**Session VI: The Path Forward**

*Chairpersons: Rich Wilson and Victor Nwosu*

**10:45 Genetic resources: Where do we go from here?**

H.T. Stalker

 *North Carolina State University, Raleigh, NC 27695*

**11:10 Review of strategic plan**

**11:20 Break-out Sessions**

Interactive Discussion Questions: Important problems that threaten global peanut supply & quality Major recent accomplishments in global peanut research What needs to be done next?

**12:30 Lunch**

**Session VII: Closing Session**

*Chairpersons: Rich Wilson and Victor Nwosu*

**14:00 Strategic prominence of peanuts in sustainable global food security**

**14:15 Reports from break-out groups**

* Genomic resources
* Germplasm Resources & Crop Improvement
* Product Quality & Safety

**15:00 Summary**

**15:15 Next meeting and other business**

**15:30 Awards and Recognition**

**15:30 Break**

**Sunday, November 8 and Monday, November 9 – Tours**

**POSTER PRESENTATIONS**

**1. SNPs discovery and Fluidigm genotyping in a cultivated peanut x wild species F­2 population.**

C. Ballén-Taborda, S. Leal-Bertioli\*, J. Morrissey, D. Livingston, Y. Chu, C.C. Holbrook, P. Ozias-Akins, S.A. Jackson, and D. Bertioli

*\*University of Georgia, Athens; EMBRAPA, Brasília, Brazil*

**2. Mapping late leaf spot and rust resistance using an improved consensus map in peanut (Arachis hypogaea L.)**

R.S. Bhat\*, R.M. Kolekar, B. Asha, M. Sukruth, K. Shirasawa, V. Sujay, Y. Khedikar, C. Sarvamangala, M.V.C. Gowda, B.N. Motagi, and R.K. Varshney

*\*College of Agriculture, University of Agricultural Sciences, Dharwad-580005, India*

**3. Evaluation of multiple stress tolerant groundnut genotypes for productivity and nutritional quality in Nigeria**

B.N. Motagi\*, H.A. Ajeigbe, C. Echekwu, S.G. Mohammed, A.A. Adnan, L.O. Omoigui, H.M. Desmae, E. Monyo, P. Okori, J. Janila, H.D. Upadhyaya, R.K. Varshney, and R. Tabo

*\*International Crops Research Institute for Semi­Arid Tropics (ICRISAT), Kano, Nigeria*

**4. Multiple biotic stress resistant and productive genotypes identified under Spanish bunch background in groundnut (*Arachis hypogaea* L.)**

B.N. Motagi, M.V.C. Gowda, G.K. Naidu, H.L. Nadaf, R.S. Bhat, and P.V. Kenchangoudar

*\*Department of Genetics and Plant Breeding, University of Agricultural Sciences, Dharwad-580 005*

**5. Evaluation of groundnut genotypes for resistance to *Sclerotium rolfsii*. under artificial field inoculated condition**

 S. Pujer\*, P.V. Kenchangoudar, M.V.C. Gowda, and B.N. Motagi

*\*Oilseeds Scheme, Main Agricultural Research Station, University of Agricultural Sciences, Dharwad-580 005, Karnataka, India*

**6**. **Cloning and functional analysis of peanut SAD promoter**

Lei Shi\*, Fei-yan Qi, Suo-yi Han, Bing-yan Huang, Wen-zhao Dong, Feng-shou Tang, Xin-you Zhang

*\*Industrial Crops Research Institute, Henan Academy of Agricultural Sciences / Key Laboratory of Oil Crops in Huanghuaihai Plains, Ministry of Agriculture / Henan Provincial Key Laboratory for Oil Crops Improvement, Zhengzhou 450002, China*

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**7. Use of SNP technology for marker-assisted breeding using peanut interspecific introgression lines**

Mark D. Burow\*, Ratan Chopra, Roshan Kulkarni, Theophilus Tengey, Jennifer Chagoya, Jeffrey Wilson, Michael R. Baring, A. Hillhouse, Charles E. Simpson

*\*Texas A&M Agrilife Research; Texas Tech University, Dept. of Plant and Soil Science*

**8. CRISPR/Cas9-mediated genome editing in peanut**

 M. Yuan, P. Dang, C. Chen, C.S. Prakash, and G. He\*

*\*Tuskegee University, Tuskegee AL 36088*

**9. Redox systems are a potential link between drought stress susceptibility and the exacerbation of aflatoxin contamination in crops**

L. Yang, J.C. Fountain, X. Ni, P. Ji, B.T. Scully, R.C. Kemerait, R.D. Lee, and B. Guo\*

*\*USDA-ARS Crop Protection and Management Research Unit, Tifton, GA, USA*

**10. Construction of a SNP-based genetic linkage map by ddRADseq and QTL detection for resistance to late leaf spot and plant type‑related traits in peanut**

X. Zhou, Y. Xia, X. Ren, Y. Chen, L. Huang, B. Liao, Y. Lei, L. Yan, and H. Jiang\*

*\*Oil Crops Research Institute of the Chinese Academy of Agricultural Sciences*

**11. Deep sequencing-based comparative transcriptional profiles for response to aflatoxin production by *Aspergillus flavus* in resistant and susceptible peanut genotypes**

H. Wang, Y. Lei, L. Wan, L. Yan, X. Ren, Y. Chen, X. Zhou, H. Jiang, and B. Liao\*

*\*Oil Crops Research Institute of Chinese Academy of Agricultural Sciences, Wuhan, Hubei 430062, China*

**12. Integration of rapid phenotyping and genotyping tools for peanut genetic improvement**

D.J. O’Connor\*, R.C.N. Rachaputi, R.J. Henry, A. Furtado, and G.W. Wright

*\*Peanut Company of Australia, Kingaroy, QLD, 4610*

**13. Evaluation of intensity and duration of seed dormancy in a recombinant inbred population derived from Spanish bunch genotypes**

Y.B. Naganagoudar\*, P.V. Kenchangoudar, B.N. Motagi, M.V.C. Gowda, H.L. Nadaf, and S. Pujer

*\*Oilseeds Scheme, Main Agricultural Research Station, University of Agricultural Sciences, Dharwad-580 005, Karnataka, India*

**14. Response of groundnut mini core collection to iron deficiency chlorosis**

O.K. Singh\*, S.K. Pattanashetti, B.D. Biradar, G.K. Naidu, H.D. Upadhyaya, M.K. Pandey, and R.K. Varshney

*\*Department of Genetics and Plant Breeding, College of Agriculture, Vijayapur 586 101, U.A.S., Dharwad (India)*

**15. Phenotyping of a RILs population derived from a synthetic amphidiploid for peanut smut resistance.**

F. de Blas\*, S. Soave, L. Torres, C. Oddino, M. Pepermans, J. Soave, and M. Buteler

*\*F.C.A. – U.N.C.; 2Criadero El Carmen, 3F.A.V. – U. N. R. C.*

**16. Screening of groundnut interspecific derivatives for resistance to *Sclerotium rolfsii***

M. Balaraju, P.V. Kenchangoudar\*, B.N. Motagi, S.S. Adiver, M.V.C. Gowda, and S. Pujer

*\*Oilseeds Scheme, Main Agricultural Research Station, University of Agricultural Sciences, Dharwad-580 005, Karnataka, India*

**17. Molecular cloning and characterization of phospholipase D from peanut (*Arachis hypogaea*)**

 S. Chen\*, B. Liao, and Y. Li

*\*Hebei Provincial Laboratory of Crop Genetics and Breeding, Cereal and Oil Crop Institute, Hebei Academy of Agricultural and Forestry Science, Shijiazhuang, 050031, China*

**18. Chromosome structural stability but canalized amphiplasty in AABB allotetraploids of *Arachis***

 G. Seijo\*, L. Chalup, S.S. Samoluk, A.P. Fávero, and G. Robledo

*\*Instituto de Botánica del Nordeste*

**19. Genetic mapping of microsatellite markers based on genome survey sequences and expressed sequence tags in *Arachis* Species**

L. Huang, B. Wu, J. Zhao, X. Ren, Y. Chen, X. Zhou, B. Liao, and H. Jiang\*

*\*Oil Crops Research Institute (OCRI) of Chinese Academy of Agricultural Sciences (CAAS), Wuhan, Hubei, 430062, China*

**20. Combining biotech and conventional methods used to develop high oleic, Sclerotina blight resistant peanut cultivars**

 K. Chamberlin\*, N. Wang, R. Bennett, and J. Damicone

*\*USDA ARS, Stillwater, OK*

**21.** **Development of novel SSR makers within resistance gene analogues for groundnut (*Arachis hypogaea* L.)**

Y. Amaravathi\*, R.P. Vasanthi, K. Raja Reddy

*\*Acharya N.G. Ranga Agricultural University, Regional Agricultural Research Station, Tirupati-517502*

**22. Genotype and environment influence on antioxidant expression and antioxidant related proteins in *Arachis hypogaea***

 Y.Y. Poon\*, S. Muralidharan, G. Wright, P. Haynes, and A. Lee

***\*****ARC Training Centre for Advanced Technologies in Food Manufacture, School of Chemical Engineering, University of New South Wales, Kensington, NSW 2052, Australia*

**23. Host range of the peanut root rot pathogen *Fusarium* *neocosmosporiellum***

Kyle Wenham

*\*School of Agriculture and Food Science, The University of Queensland, Gatton, Queensland, 4343, Australia*