Minutes: International Peanut Genome Initiative Meeting
APRES, Menger Hotel, San Antonio TX
7/11/11

Participants: See attached list

Issues: See attached Agenda

Proceedings:
Valentine convened the meeting; the agenda was approved without change.

Wilson reviewed minutes of previous meetings and teleconferences held on 6/12-15/.2011 and 6/28/2011. All minutes were approved as submitted and will be posted on www.peanutbioscience.com. New members of the PGC Executive Committee were announced: Sachiko Isobe, Graeme Wright, Farid Waliyar, and Ran Hovav.

Valentine recapped events at *Advances in Arachis through Genomics & Biotechnology* (June 13-15, 2011, Brasilia, Brazil). 93 registered participants represented 10 countries, 14 from the U.S. AAGB-2011 provided a great forum for renewing fellowship and collaborative working relations. Charles Simpson was recognized for pioneering efforts in wild peanut germplasm conservation. Many participated in an optional field expedition for collection of wild peanut germplasm led by Jose Valls. The technical program featured plenary sessions on topics being considered for the next IPGI Strategic Plan.

Members of the Strategic Plan writing team presented summaries of each section. The scope of the plan is unchanged. A draft outline of goals and performance measures follows. **Final comments and amendments are due to Wilson by July 30, 2011.:**

Allelic Diversity & Germplasm Resources
Goal 1: Characterize genetic diversity and transfer useful genes into new sources of germplasm for crop improvement

Performance Measures
1.1 Conserve A. hypogaea and wild peanut species collections so that pure lines are available for analyses.
1.2 Evaluate A. hypogaea and Arachis species accessions for important agronomic traits.
1.3 Improve access to genetic diversity through germplasm resources that facilitate transfer of useful traits to cultivated peanut.

Genome Sequencing & Structural Characterization
Goal 2: An ordered, anchored, annotated and accessible genome sequence to facilitate peanut improvement

Performance Measures
2.1 Produce a reference genome sequence for cultivated tetraploid peanut.
2.2 Annotation of the genome sequence
2.3 A 'breeder-friendly' database to house and curate the primary and annotated genome sequences
2.4 Evaluation of emerging technologies for genome sequencing and characterization

Genetic Trait Mapping & Gene Discovery
Goal 3: Enhancing crop improvement using genetic and genomic tools

Performance Measures:
3.1. Molecular marker resources in peanut
3.2 Genetic maps / consensus map for diploid and tetraploid peanut
3.3. Phenotypic validation of gene predictions
3.4 Genome mapping and allelic analysis through Genome-Wide-Association-Studies.
3.5 Catalog expressed genes and profile gene expression in cultivated peanut

Product Quality & Safety
Goal 4: Integrated research strategies for major issues that impact global marketing and consumer preferences for peanuts and peanut products

Performance Measures:
4.1 Improve food safety by minimizing aflatoxin level in finished food products

4.2 Improve quality of raw peanuts

Crop Improvement

Goal 5: Ensure an adequate supply of agronomic and high-quality peanut cultivars for commercial production

Performance Measures:

5.1 Enhance understanding of genetic diversity and genomic variation for important traits in Arachis.
5.2 Improve methods to develop genetic resources with useful traits.
5.3 Improve selection efficiency through use of genomic resources.
5.4 Optimize fungicide & pesticide application schedules in peanut production.
5.5 Improve understanding of the epidemiology of peanut pathogens.

The following changes to PGC Policies & Procedures were approved. **Wilson will incorporate these changes in P&P v.5.3 and post online.**

Article II Structure & Roles of Committees

Section 1.01 Executive Committee

02(b) Committee Composition

(iv) Officers

A Chairperson and two (2) Co-Chairpersons will be elected by a simple majority of EC members at an Annual Meeting for a term of one-year, without term limits. The Chairperson shall be responsible for general management, supervision and direction of EC activities. In the absence or direction of the Chairperson, a Co-Chairperson shall have these duties. One officer will be a representative of a research institution. Any officer may resign upon giving written notice to the EC via the AO. Vacancies will be filled by the EC in a timely manner for the remainder of the term.

(vii) Ex Officio Members

The function of ex-officio members will be to maintain awareness of the activities and exchange of information among PGP researchers, and serve as an expert resource for decisions and actions considered by the EC. Ex-Officio members are invited but not required to attend or participate directly in IPGI, PGC and PGP meetings or teleconferences.

(viii) International Liaisons

Members of the EC may be appointed to serve as an International liaison (IL). An IL will serve as the principle conduit for transfer of information between the PGC
and a geographical sector of the genomics research community, and may promote awareness of the PGP among professional colleagues in the genomics research community. ILs are invited but not required to attend or participate directly in IPGI, PGC and PGP meetings or teleconferences.

Article III. Data Sharing & Use Policy

Section 3.09 Publication Policy

Authorship on the paper first describing the peanut genome will require substantial intellectual contribution to conception and design of experiments or analysis and interpretation of data as well as contribution to writing or presentation of information in the article. The primary corresponding author for this publication, and the sole communicator with the target journal, will be responsible for pre-publication communication with all other authors to reach agreement on author order and publication content, to notify each author of submission status, and to circulate revisions and proofs. Each author will provide a statement describing their contribution (i.e., 1 - intellectual input for experimental design or analysis; 2 - novel, unpublished primary data; and 3 – writing of manuscript) to the corresponding author which may be included in the publication depending on requirements of a targeted journal. Since it is anticipated that a large number of international groups and scientists will be involved in generating a peanut genome sequence, publication authorship will follow the precedent of the International Rice Genome Sequencing Project where authors and contributions are listed by institution in a footnote (Nature 2005 436:793); the author name, The Peanut Genome Project, is proposed. The leader of each institution team agrees to follow the current responsibility guidelines from Nature Publishing (http://www.nature.com/authors/policies/authorship.html): “(1) ensuring that original data upon

which the submission is based is preserved and retrievable for reanalysis; (2) approving data presentation as representative of the original data; and (3) foreseeing and minimizing obstacles to the sharing of data, materials, algorithms or reagents described in the work." For all components of the Peanut Genome Project, this is interpreted to mean that original sequence data will be deposited in public databases including NCBI and LIS. Teams are discouraged from pre-publishing extensive genome data generated in the context of the peanut genome project that would be expected to contribute to the landmark peanut genome paper. Authorship on publications subsequent to the paper describing the peanut genome, which are anticipated down-stream components of the peanut genome project, will follow the traditional format of a list of individual authors according to the guidelines for authorship contribution described above and authorship order as determined by mutual agreement among authors and under the coordination of the corresponding author for each manuscript.

Updates were presented on activities under each component of the Peanut Genome Project. Highlights follow:

- BGI will establish a sequencing center in Sacramento, CA. Nwosu reported that PGC discussions with BGI are ongoing.
- An international naming convention will be developed for gene loci
- Core sets of markers will be used to construct consensus genetic maps of tetraploid and diploid genomes
- Phenotyping labs could be established in Oklahoma and/or Georgia
- Xinyou Zhang will be the principle contact for cooperative research in China (except BGI)
- Boshou Liao has agreed to send DNA & phenotypic data on samples from the Chinese mini-core collection to UC-Davis. The Chinese peanut collection was reported to hold 7000 accessions.
- **Holbrook, Burow, Ozias-Akins and Stalker will draft guidelines and protocol for standardizing phenotypic description of mapping populations by August 1.**
- **Barkley will develop a library of photo documented descriptors of phenotypic variation among accessions of the USDA peanut germplasm collection, and coordinate publication of a CODEX with Upadhyaya (ICRISAT) and Stalker.**
- FTIR and refractive index technology was considered for qualitative screening for phenotypic variation in oleic acid concentration**.**

Wilson drafted a briefing paper on the PGC and has submitted it for review to Roy Scott and Nwosu. The final draft of this document will be forwarded for background to USDA, REE Under Secretary Woteki. PGC representatives plan to meet with the Under Secretary in August to inform her about the PGC and inquire how the PGP might fit into her plans for the USDA China Most Program and other relevant Departmental activities. A subsequent meeting is planned between PGC representatives and officials in China to strengthen U.S.-Chinese collaborative research efforts.

Varshney will organize a breeder workshop to evaluate and standardize breeding methods for genomic studies at the VI International Conference on Legume Genetics & Genomics, Hyderabad India, October 3-8, 2012

Action items:

- Members of the Strategic Plan writing team will submit f**inal comments and amendments to Wilson by July 30, 2011**
- Wilson will incorporate approved changes to P&P v.5.3 and post online
- **Holbrook, Burow, Ozias-Akins and Stalker will draft guidelines and protocol for standardizing phenotypic description of mapping populations by August 1**
- Barkley will develop a library of photo documented descriptors of phenotypic variation among accessions of the USDA peanut germplasm collection, and coordinate publication of a CODEX with Upadhyaya (ICRISAT) and Stalker.

Next Meeting: Executive Committee teleconference, August 1, 2011 @ 11:00 AM EDT

AGENDA

International Peanut Genome Initiative

Cavalier Room, The Menger Hotel

San Antonio, TX

July 11, 2011; 5:00 to 7:00 PM CDT

Welcome & Introductions

Approval of Agenda

Approval of Minutes from Recent Meetings:

- **PGC Meetings at AAGB-2011, 6/12-15/2011**
- **PGP Executive teleconference, 6/28/2011**

- **Report on AAGB-2011 in Brasilia, Brazil**
- **Update on Strategic Plan for 2012-2016**
  - **Allelic Diversity & Germplasm Resources (T. Stalker, J. Valls)**
  - **Genetic Mapping & Gene Discovery (P Ozias-Akins, R. Varshney)**
  - **Genome Sequence & Structure (S. Jackson, D. Bertioli)**
  - **Product Quality & Safety (V. Nwosu, B. Guo)**
  - **Crop Improvement (C. Holbrook, I. Godoy, Mark Burow)**
- **Peanut Genome Consortium**
  - **Peanut Genome Project**
    - **Component 1: Tetraploid Reference Genome Sequence — Howard Shapiro**
    - **Component 2: Ultra Dense Map of Allelic Variation — Lutz Froenicke**
    - **Component 3: RNAseq Analysis of Transcriptomes — Peggy Ozias-Akins**
    - **Component 4: Other Approaches — Lutz Froenicke**
    - **Component 5: Phenotyping & Validation — Corley Holbrook**
    - **Component 6: Bioinformatic Resources**
- **International Collaboration Updates**

Other Business

Next Meeting

Meeting Attendance:

Howard Valentine
Scott Tubbs
Lisa, Dean
Rich Wilson
Albert Culbreath
Tim Brenneman
Bill Branch
Stanley Fletcher
Maria Gallo
Mark Burow
Rodney Coe
Jeff Sharrock
James Hall
Steven Thornton
Jianping Wang
Peggy Ozias-Akins
Corley Holbrook
Tom Isleib
Shyam Tallury
Pat Donahue
Mark Kline
Jim Elder
Noelle Barkley
Baozhu Guo
Victor Nwosu
Suping Feng