

GRIN-Global System Development – Retrospective

Presentation to the TSG

Thursday, September 30, 2010



GRIN History and Evolution

- 1985 – present: GRIP -> GRIN
 - NPGS genebank management system developed by the NGRL-DBMU (Beltsville) in conjunction with genebank site personnel, e.g., Harold Bockelman, Mark Millard
- Sept-Oct, 2005: NP 301 Review Team and Customer-Stakeholder Workshop recommend that GRIN be upgraded substantially.

Evolution Continued...

- 2006 – 2011: NP301 National Program Action Plan
 - “GRIN...will be linked more effectively to other GR databases worldwide, and will be transformed so that it more efficiently and effectively delivers the wide variety of information required for successful germplasm curation and use.”
- 2008: NGRL and NCRPIS (Ames) new Project Plans include objectives for developing and enhancing GRIN.

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- July, 2006: Cary Fowler, Director of the Global Crop Diversity Trust (GCDDT) visited NPGS sites NCGRP, DBMU and NCRPIS. He asked the NPGS to develop and articulate a strategy and recommendations for the GCDDT efforts to provide information on global germplasm collections and to facilitate conservation, distribution, and utilization of plant genetic resources.
 - The concepts and assumptions that formed the basis of the GRIN- Global System evolved from these discussions.

- June, 2007:
 - The Trust invited USDA-ARS to partner with them and Bioversity in a collaborative project to develop a freely available, open-source, database flexible system to address global genebank management needs.
 - USDA/ARS hosts a meeting of scientific personnel from the Trust, Bioversity, ARS, Agriculture and Agri-Food Canada and INIFAP, Mexico to bring together genebank, genomics, genetics, informatics, IM system development, and practical considerations.

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- August, 2007: Pete Cyr (Ames) is reassigned to GG system design & development research and pre-project preparations.
 - December, 2007: Three-year project is funded by GCDT with Pete Cyr as Project Manager. Mark Millard, Maize Curator, is designated as Business Analyst.
 - May, 2008: Brock Weaver, developer, is hired by Bioversity to work in Ames.

- Original DBMU team members included Quinn Sinnott (database administration), Gorm Emberland, developer, Mark Bohning, Sharon Stern, Kurt Endress, and John Chung.
- Peter Bretting has served as USDA/ARS PI, and Michael Mackay as Bioversity PI for the Project.

- A Technical Steering Group (TSG) is formed and meets for the first time in Beltsville in August, 2008, then in August 2009 and September/October 2010.
- TSG recommendations included initiating development of the public interface earlier than projected, and seeking stakeholder input often.
- As a result, Rachelle Little was hired by Bioversity and joined the Dev Team in Ames in December, 2008 as Web developer/Analyst, focusing on information gathering and analysis.

- Marty Reisinger, IT Specialist charged with development of documentation and training, joined the DBMU Dev Team in February, 2009.
- Laura Gu, software developer, joined the DBMU Dev Team in October, 2009 and focuses on public interface development, and taxonomy in particular.

P. Bretting,
NP 301 Leader and GRIN-
Global Development
Project PI,
USDA-ARS, Beltsville, MD

**GRIN-Global Project
Development:
USDA-ARS & Bioversity**

**GRIN-Global Project
International
Deployment**

M. Mackay,
GIGA Project PI
Bioversity, Rome, Italy

**USDA-ARS PIRU,
Ames, IA**

C. Gardner,
Research Leader

P. Cyr, GRIN-Global
Project
Project Leader

M. Millard,
Analyst

L. Burke,
Testing

**USDA-ARS NGRL,
Beltsville, MD**

G. Kinard,
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Q. Sinnott,
Database Administrator

G. Emberland,
Software Developer

L. Gu,
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Data Specialist

M. Reisinger,
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**Bioversity,
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R. Little,
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Argentina: J. Tilleria

Caucasus and Central Asia,
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CIMMYT/Mexico:
B. Espinosa Garcia

Europe, I. Faberova

Sub-Saharan Africa:
F. Atieno,

Asia-Pacific:
P. Narain Mathur

North and West Africa:
H. Oabbao

Central & West Asia &
North Africa:
MacKay & Franco in
cooperation with ICARDA

L. Guarino, Global Crop Diversity Trust,
Rome, Italy

9/30/2010

**Core
Development
Team Members**

Lessons Learned

- Technology
- Team dynamics
 - Respect
 - Appreciation
 - Mutual support
 - Clarity of roles, responsibilities, accountability
- Importance of rigorous, early, and regimented regression testing in order to meet schedules
- Continuous, iterative product development and improvement are dependent on continuous learning

Special thanks...

- Michael Mackay – co-PI of the GRIN-Global Project and PI of the GIGA Project:
 - organized international community participation, identified participants and their training needs
 - insisted that the development team understand the considerations of the non-GRIN-centric world
 - travelled, trained, and has been completely devoted to meeting the needs of the global plant genetic resources communities

...Thanks....

- International Participants
 - Train the Trainer and Workshop participants
 - Their commitment to advancing plant genetic resource conservation and utilization is evident from their devotion to learning, testing, and system deployment.
 - Translators
 - Feedback providers



...Thanks....

- Dev Team's talent, focus and dedicated efforts
 - Pete Cyr, Mark Millard, Brock Weaver, Rachelle Little
 - Gorm Emberland, Laura Gu, Marty Reisinger, Quinn Sinnott
 - Gary Kinard

...Thanks...

- The GCDT and USDA/ARS leadership for supporting this project to develop a new information management for the plant genetic resource community.
- Much still remains to be done!