International Wheat Yield Partnership

NIFA–IWYP Project Director Meeting

San Diego, CA, 15 January 2017

Richard Flavell
Chair, IWYP Science and Impact Executive Board

Jeff Gwyn
Program Director

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The IWYP Model

Richard Flavell
Chair, IWYP Science and Impact Executive Board

http://iwyp.org
Focus on a yield Increase to Feed 9+ Billion People by 2050

Will require a 60+ % increase in wheat production to meet food demands by 2050

Tester and Langridge. 2010. Science 327:818
To increase wheat yield potential by up to 50% in 20 years:

• To be inspired and managed by an independent management team and structure
• Linked with the private sector
• Developed with state-of-the-art technologies
• To be focused on delivery with a high degree of urgency
IWYP – A Partnership

Partnership between:

- Funding agencies in different countries
- Science teams in different countries
- Different research projects
- Private and public sector institutions
IWYP Founders Sought to:

- Do things differently
- Have own Governance
- Accept high risk / high reward science—seeking breakthroughs
- Take advantage of new technical opportunities
- **Align and partner with other funded projects—e.g. NIFA**
- Focus on outputs for farmers and consumers
- Take discoveries down the product development path (via links with CIMMYT and others)
The IWYP Science Program

Jeff Gwyn
Program Director

http://iwyp.org
IWYP is a Frontier Program for Making Breakthroughs in Yield Potential

- Explore new germplasm
- Discover high impact traits and their underpinning genetics
- New methods for creating variation
- New methods for screening traits
- Genome-wide polymorphic markers
- Rapid screening in fields
- Rapid validation in elite germplasm in fields
IWYP Goal and Strategy

**GOAL - Increase the genetic yield potential of wheat by 50% in 20 years**

Canopy & Biomass Building

- Optimize carbon fixation and canopy growth/architecture
- Optimize flowering time
- Senescence and grain filling

**The IWYP Science Program**

Our strategy to:
- Facilitate the sharing and integration of research, project outputs
- Time material inputs, manage capacities
- Realize synergies and generate added value
- Deliver traits and germplasm
Partners in the IWYP Initiative

- **Funding and research organization partners** – provide the resources
- **Private industry partners** – provide strategic direction for deployment, commercial products
- **Science and Impact Executive Board** – provides overall strategy, operational direction and recommendations to Funders
- **Independent managers** – SIEB Chair, Program Director and Manager, Secretariat – operations, coordination
- **Scientists** – most essential and important team member stakeholders that need to be engaged and responsible, creative, focused on delivery with a sense of urgency, collaborative and sharing, successful
Dozens of researchers from 9 countries:

- 8 project selected from IWYP 1st Competitive Call
- 7 projects selected from USDA NIFA-IWYP Call
- 6 IWYP Aligned Projects (growing)

Science portfolio is expanding:

- IWYP 2nd Competitive Call (OPEN NOW!)
- Future Calls (IWYP and Aligned)
- Aligned Projects
IWYP will Capitalize on an R&D Portfolio

The science ...

Funded in companies  

Funded via IWYP  

IWYP Aligned Projects  

Funded and published separately

Coupled with project selection gives IWYP a *Portfolio* of research and future options for impact.
**IWYP HUB – Validation and Development**

**HUB Platform approach at CIMMYT:**

- Brings all discoveries into a single source to compare and combine to seek synergies and generate added value
  - Trait validation
  - Precision phenotyping
  - Field evaluation
  - Prebreeding
  - Trials and distribution via IWIN

- Enables the IWYP to drive the discoveries/traits toward the market
# Rounds of Discovery, Stacking, Trialing and Seed Multiplication Before 2050

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<th>Year</th>
<th>Discovery &amp; Validation</th>
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IWYP is a Long Term Continuous Program with Multiple Research Components
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2nd IWYP Program Conference

- **20-24 March 2017 in Obregon, Mexico** (in conjunction with CIMMYT)
- This is a hands-on interactive meeting
  - Important event for sharing your science, getting and giving feedback, linking with other projects, building research teams, and integrating into the IWYP Science Program overall
  - Important for all IWYP and NIFA-IWYP Project Leaders and key Principal Investigators to attend and actively participate
  - Participants include research scientists, IWYP Management and SIEB members, IWYP SAC members, IWYP Private Partners, key CIMMYT scientists
  - Project Leaders will present project descriptions, progress updates
  - Discussions - Q&A, feedback to IWYP, brainstorming, planning, etc.
  - A day In the field for CIMMYT Visitors Day & IWYP Hub field tours

www.iwyp.org
Thank You

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