Maize Genetics Community Session:

Update from US funding agencies:
-- Ann Sylvester, Program Director, PGRP
-- Cliff Weil, Rotator, PGRP
-- Karen Cone, Program Director, Genetic Mechanisms, MCB

Update from MaizeGDB:
-- Carson Andorf

Update from Maize Genetics Executive Committee (MGEC):
-- Karen Koch, Chair (UF) ----- Survey highlights and new initiatives
-- Jianming Yu, Chair-Elect (ISU)
Maize Genetics Community Session:

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The Maize Genetics Executive Committee (MGEC):
What do we do?

--- Identify needs and opportunities
--- Communicate to the broadest-possible life-science community
--- Help recognize some of the best among us (Awards)
--- Interface with MaizeGDB and the Steering Committee (Program)
The Maize Genetics Executive Committee (MGEC):
What do we do?

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--- Interface with MaizeGDB and the Steering Committee (Program)

New this year:
--- RA Emmerson Award for Lifetime Achievement in Maize Genetics
--- New funding and initiatives:
   RCN (Research Coordination Network)
   “Broadening and Energizing the Maize Genetics Research Community”
The Maize Genetics Executive Committee (MGEC)?

Karen Koch (Chair)  
U. Florida  

Jianming Yu (New Chair)  
Iowa State U.  

Sean Kaeppler  
U Wisconsin  

Paul Chomet  
NRGene  

Pat Schnable  
Iowa State U  

Kathleen Newton  
Univ. Missouri  

Natalia de Leon  
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Sherry Flint-Garcia  
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Tom Brutnell  
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David Jackson  
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Marilyn Wharburton  
USDA  

Ed Buckler  
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The Maize Genetics Executive Committee (MGEC) - Appointed members

Irina Makarevitch  
Hamline U  
USA  
Small-Collage Rep

Silvio Salvi  
U of Bologna  
Italy  
European Rep

Jianbing Yan  
Huazhong Ag U  
China  
Asian Rep

Ruairidh Sawers  
Cinvestav  
Mexico  
Latin American Rep
Awards Committee:

Nathan Springer  
U Minnesota

Sarah Hake  
UC Berkeley

Natalia De Leon  
UW-Madison

Mike Freeling  
UC Berkeley

Paula McSteen  
U Missouri

David Braun  
U Missouri

Jianming Yu  
Iowa State U
Maize Genetics Community?
Who are we?

Over 350 total replies – Thank you!
Who are we?

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Why does this matter?
Who are we?

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Why does this matter?

New funding: A Research Coordination Network (RCN) proposal submitted by the Maize Genetics Executive Committee (MGEC) will be funded by the US-National Science Foundation (NSF).
Who are we?

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Why does this matter?

**New funding:** A Research Coordination Network (RCN) proposal submitted by the Maize Genetics Executive Committee (MGEC) will be funded by the US-National Science Foundation (NSF).

**Funding will support a 5-year plan for our community:**
--- The next 5 Maize Genetics Conferences
--- Resources to help identify, prioritize, and target our most important needs at a community level.
Who are we?

Over 350 total replies – Thank you!

Why does this matter?

**New funding:** A Research Coordination Network (RCN) proposal submitted by the Maize Genetics Executive Committee (MGEC) will be funded by the US-National Science Foundation (NSF).

**Funding will support a 5-year plan for our community:**
--- The next 5 Maize Genetics Conferences
--- Resources to help identify, prioritize, and target our most important needs at a community level.

**We need to know:**
--- What ARE our most important needs at a community level?
--- How do we best increase our depth, breadth, and vibrancy?
The survey: Over 350 total replies – Thank you!
Who are we?  Over 350 total replies – Thank you!
Who are we?

- Lab Head: 190 replies
- Research Scientist: 100 replies
- Grad Student: 50 replies
- Post Doc: 25 replies
- Educator: 25 replies
- Other: 25 replies
Who are we?

Research areas

- Cytogenetics
- Crop evolution
- Education, outreach
- Transposons, epigenetics
- Cell and developmental biol.
- Computational and large-scale biol.
- Quant genetics, breeding
- Physiol, biochem, mol biol.
- Other diverse areas

Replies (Number)
Who are we?

Diverse species studied

- Arabidopsis
- Sorghum
- Rice
- Soybean
- Wheat
- Setaria
- Barley
- Brassica
- Brachypodium
- Cotton
- Tripsicum
- Canola
- + Others

Replies (Number)
Who are we?

Number of Maize Genetics Conferences attended (lifetime)
Community-level priorities?

Most important areas for community focus?

- Genetic tools and resources: 4
- Informatic tools, resources, services: 3
- Training, student recruitment: 3
- Interface with private sector: 3
- Community breadth, expertise: 3

Importance (5 high)
Community-level priorities?

<table>
<thead>
<tr>
<th>Priority</th>
<th>Importance (5 high)</th>
</tr>
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<tbody>
<tr>
<td>Genetic tools and resources</td>
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Importance (5 high)
Community-level priorities?

- Maize stock centers
- Transformation and gene-editing facilities
- Public knockout mutant resources
Community-level priorities?

Maize stock centers
Transformation and gene-editing facilities
Public knockout mutant resources
Simplified access and retrieval from public databases
High-quality annotations for key inbreds
Improved tools for integration of omics data
### Community-level priorities?

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<tr>
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![Graph showing collective priorities](image-url)
Community-level priorities?

- Maize stock centers
- Transformation and gene-editing facilities
- Public knockout mutant resources
- Simplified access and retrieval from public databases
- High-quality annotations for key inbreds
- Improved tools for integration of omics data
- $ for graduate students to attend maize meetings
- Broaden participation in MAGNet-like programs

Collective priorities

Importance (5 high)
## Community-level priorities?

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<td>Broaden participation in MAGNet-like programs</td>
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<td>Help support attendees from the developing world</td>
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![Bar chart showing collective priorities with importance ratings](chart.png)
Community-level priorities?

Most important genetic tools and resources?

- Maize stock centers: 4.5
- Transformation and gene-editing facilities: 4.0
- Public knockout mutant resources: 4.0
- Diversity, mapping, breeding populations: 3.5
- Field resources for multi-location testing, winter nurseries: 3.5
- Collections of transgenic marker lines for cell biol.: 3.0
Community-level priorities?

Most important informatic resources?

- Simplified access and retrieval from public databases (5)
- High-quality annotations for key inbreds (4)
- Improved tools for integration of omics data (4)
- Integratable data sets for key inbreds (3.5)
- Coordination of multi-species data-sets for comparative genomics (3.5)
- Tools for acquisition and archiving of standardized phenotypic data (3.3)
- Tools for gene-to-cell system crop modeling and gene network analysis (3)
- Virtual reality resources for research and education (2.5)
Community-level priorities?

**Most important training and recruitment goals?**

- $ for graduate students to attend maize meetings
- Training workshops in emerging disciplines
- Continuing education for mentors on informatics and quantitative bio
- Resources to aid integration of bioinformatics in curricula
- $ for undergraduates to attend maize meetings

Importance (5 high)
Community-level priorities?

Most important goals for basic to commercial?

- Outreach to stakeholder groups: Importance 3
- Workshops for entrepreneurship and tech transfer: Importance 3

Importance (5 high): 0 1 2 3 4 5
Community-level priorities?

Most important aspects of breadth?

- Broaden participation in MAGNet-like programs (4)
- Strengthen integration with undergraduate institutions (PUIs) (3)
- Support speakers with expertise outside maize core (3)
- Recruit meeting attendees from outside the maize core (3)
- Send opt-in invitations to list-serves of other societies (3)
- Help support attendees from the developing world (4)

Importance (5 high)
Community-level priorities?

- Maize stock centers
- Transformation and gene-editing facilities
- Public knockout mutant resources
- Simplified access and retrieval from public databases
- High-quality annotations for key inbreds
- Improved tools for integration of omics data
- $ for graduate students to attend maize meetings
- Broaden participation in MAGNet-like programs
- Help support attendees from the developing world

Collective priorities

Importance (5 high)
Community-level priorities? – New initiatives

Most important areas for community focus?

- Genetic tools and resources
- Informatic tools, resources, services
- Training, student recruitment
- Interface with private sector
- Community breadth, expertise

Focus groups in each area -- for mid-year meeting
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Community-level priorities? – **New initiatives**

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**Focus groups in each area**
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