Welcome:  
Meeting was called to order at 8:40 AM by TSG Chair – Tom Hoegemeyer – There were 49 attendees at the meeting.

Minutes:  
Natalia de Leon reviewed the minutes of the December 9, 2009 GEM Cooperator’s meeting. Motion to approve the minutes was made by Jim Parks, and seconded by Tony Maves. Minutes accepted.

Election of TSG members:  
- Andy Ross, David Beck and Natalia de Leon completed their first three-year term as members of the TSG and each offered to serve a second term. Major Goodman made a motion to approve second terms for each TSG member and Jim Parks seconded the motion. The GEM members unanimously agreed that a second term be offered to the three TSG members.  
- Tom Hoegemeyer completed his first three-year term as chair of the TSG meeting. Motion was made by Natalia de Leon to have Tom serve another term as TSG Chair, and was seconded by David Butruille. There was unanimous agreement among the GEM cooperators to have Tom continue as TSG Chair for a second term and Tom accepted.

GEM Annual Report:  
Annual reports were discussed by Mike Blanco, GEM Coordinator for the USDA-ARS Ames location, and Matt Krakowsky, GEM Coordinator for the USDA-ARS Raleigh, NC location.

Ames, IA  
Mike presented an overview of the Ames Report and mentioned that the complete GEM Annual report (for Ames and Raleigh) was in the booklets, and on the CD which were distributed at the meeting. Highlights included the announcement of six GEM releases for the 2011 planting season coming from the GEM Iowa site. The releases include five SS’s (GEMS-0218, 0219, 0220, 0222, and 0223); and one NSS (GEMN-0221). Performance information for each was discussed later during the yield trial results section. Mike also discussed the new developmental breeding crosses that were made in Ames by GEM. Approximately 119 breeding crosses were made in Ames in 2010 and most of these crosses were tropical accessions crossed to temperate lines that were made using the shade house to induce flowering. Progress was reported for the allelic diversity (AD) project and the double haploids (DH) that were being made with the material from the AD project. Approximately 379 DH lines have now been made from 118 BC1’s that represent 74 races of maize. A brief update was given on each of the 7 Specific Cooperator Agreements (SCA) that involve public researchers working with GEM germplasm, and/or methods to develop and evaluate exotic germplasm. The SCA’s
included the U of IL for Western Corn Rootworm, Truman State University and Iowa State University for specialty starch research (amylose and waxy, and double mutants), North Dakota State University for EarlyGEM with value-added traits, University of Wisconsin for superior silage, and biofeedstock, Cornell University for anthracnose research, and Texas A&M for abiotic stress tolerance. GEM private Cooperators doing disease and insect research were thanked for their efforts. This included Dupont/Pioneer, and Professional Seed Research for disease evaluations, and 3rd Millennium Genetics for tropical insect evaluation in Puerto Rico. Public cooperators from the USDA were also acknowledged for their efforts on disease and insect resistance. This included the ARS Plant Science Research Unit in Raleigh, NC; the Plant Genetics Unit in Columbia, MO; the Crop Genetics and Breeding Unit in Tifton, GA, and the Corn Host Plant Resistance Unit at Mississippi State.

**Raleigh, NC**

Matt Krakowsky provided a summary of activities for the North Carolina site. The NC site runs 5200 yield trial plots in NC in six different locations. In addition to that, 6700 plots were run by collaborators and coordinated by the NC site. Generally low yields were observed due to the dry and hot weather that affected the region during summer 2010. Matt indicated that presently 5 private cooperators provide yield trial support to Raleigh. This includes Syngenta, Pioneer, DeKalb, Mycogen, and PANNAR. In 2010, Raleigh lost 2 public cooperators and 1 private cooperator and therefore less testing sites are available. Some of the germplasm in trials and the nursery are being further developed. This includes materials from CIMMYT (inbreds and pre-breeding), IITA inbreds, Hawaiian inbreds, prebreeding GEM material, LAMP races that may have not been tapped, and BS28, and BS29 populations from Dr. Hallauer.

The NC site runs some 3200 nursery rows plus 1150 isolation rows. A substantial effort was devoted to increase seed of the GEM releases that were developed in Raleigh, and return this seed to Mark Millard, the Curator of the NCRPIS station in Ames.

**Use of the GEM Web Site and Data Repository:**

Mack Shen, IT Specialist in Ames, indicated that there are a total of 58 images on the website covering the years from 2005 to 2010. The number of hits/month averaged 176 for 2010, which is a bit lower than the previous year which was 184/month. The 3 countries with the most hits include the US, China, and India. The 3 US states with the most hits were IA, CA, and MO. It was an early harvest season and the first data received from a cooperator arrived on September 22, which was a month earlier than 2009. A total of 48 experiments were run with 4 to 8 replications each for a total of 17,000 plots. One experiment was lost due to weather related issues in addition to some reps in other specific experiments. A set of 342 entries were identified to have higher yield (but not always similar lodging resistance) than the mean 5 checks. This represented approximately 11% of the total number of entries that were in trials in 2010. From the 342 entries that were above the check mean, 259 were from first year tests, and 83 were from second year tests. Cooperators were thanked and a slide was
presented of GEM cooperators who provide in-kind support providers for trials and nursery.

**Trial data presentation:**
Mike Blanco presented the trial data for the Iowa site. Six releases were discussed and trial data presented (which also appeared in the booklets). Releases include two lines derived from CUBA164:S2012-459/GEMS-0002 (GEMS-0218 and GEMS-0219), and one line derived from GEMS-0113/GEMS-0091 (GEMS-0220). The first two pedigrees (GEMS-0218 and GEMS-0219) is derived from a GEM x GEM line cross, tracing back to CUBA164:S2012 (Mixed Creole) x GEMS-0002 which is an FS8A(S) type; and the second (GEMS-0220) traces to Tuxpeño/Tuxpeño Olotillo. These 3 releases are the first releases that were derived from GEM x GEM lines. The other releases include BR105 (GEMN-0221), MBRC10 (GEMS-0222), and a waxy conversion of CUBA164:S2012-444 (GEMS-0223), which was made by National Starch as part of their in kind support. Two of the released lines, GEMS-0218 and GEMS-0219, has protein levels of 13.0 and 14.5%, respectively. GEM releases were discussed that had 2 years of data with above average disease resistance for Gray leafspot (GLS)-1 release; Southern leaf blight (SLB)-8 releases; and 3 anthracnose releases derived from GEM germplasm at Cornell University, NY212, NY215, and NY266.

Matt Krakowski had no new recommendations from Raleigh since he needed an additional (third) year of testing. He described experiment 7 which has been evaluated at 12 locations for 2 years now including La Posta Sequia material which is doing quite well. Experiment 25 is a combination of ex-PVP lines that hold promise. And Experiments 26, 27, 28 and 29 which include GEM X GEM trials, SSS X NSSS from Ames and SSS X NSS from Raleigh.

**Presentations:**
Kevin Pixley and Sherry Flint-Garcia gave two really informative presentations during this meeting. Kevin Pixley described his work in biofortification and genetic improvement for pro-vitamin A. He also described the Seed (Seed of Discovery) project which is a Mexican initiative to contribute to global food security, climate change and resource scarcity. Sherry Flint-Garcia talked about the genetic architecture of kernel composition in NAMs. She presented data regarding an interesting candidate gene thought to be associated with high oil in maize (DGAT gene).

The meeting concluded with a question and answer session with the speakers. At the end of the session a motion was made by Tony Maves and seconded by David Butruille to adjourn the meeting.

Meeting was adjourned at 11:55 AM.