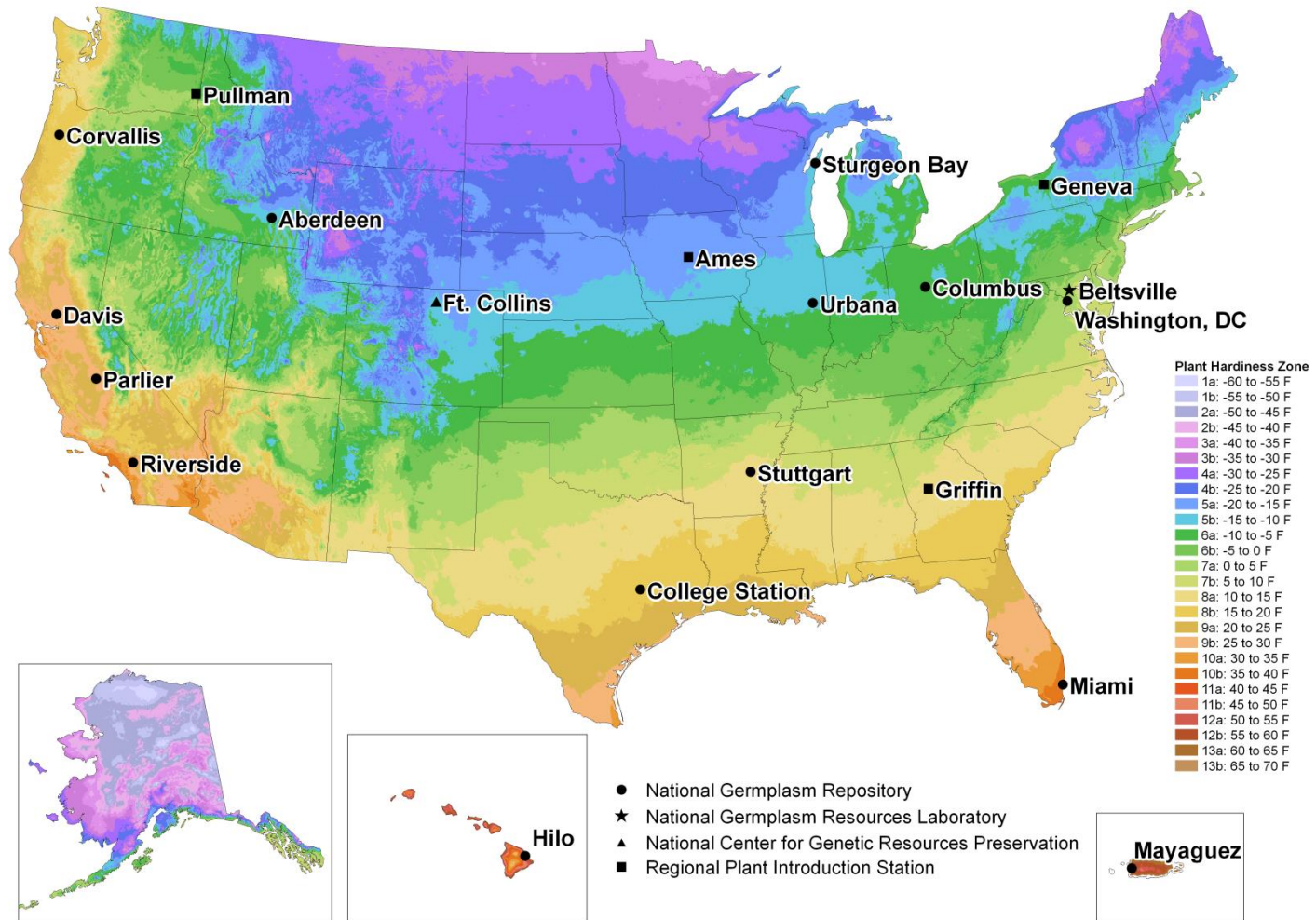


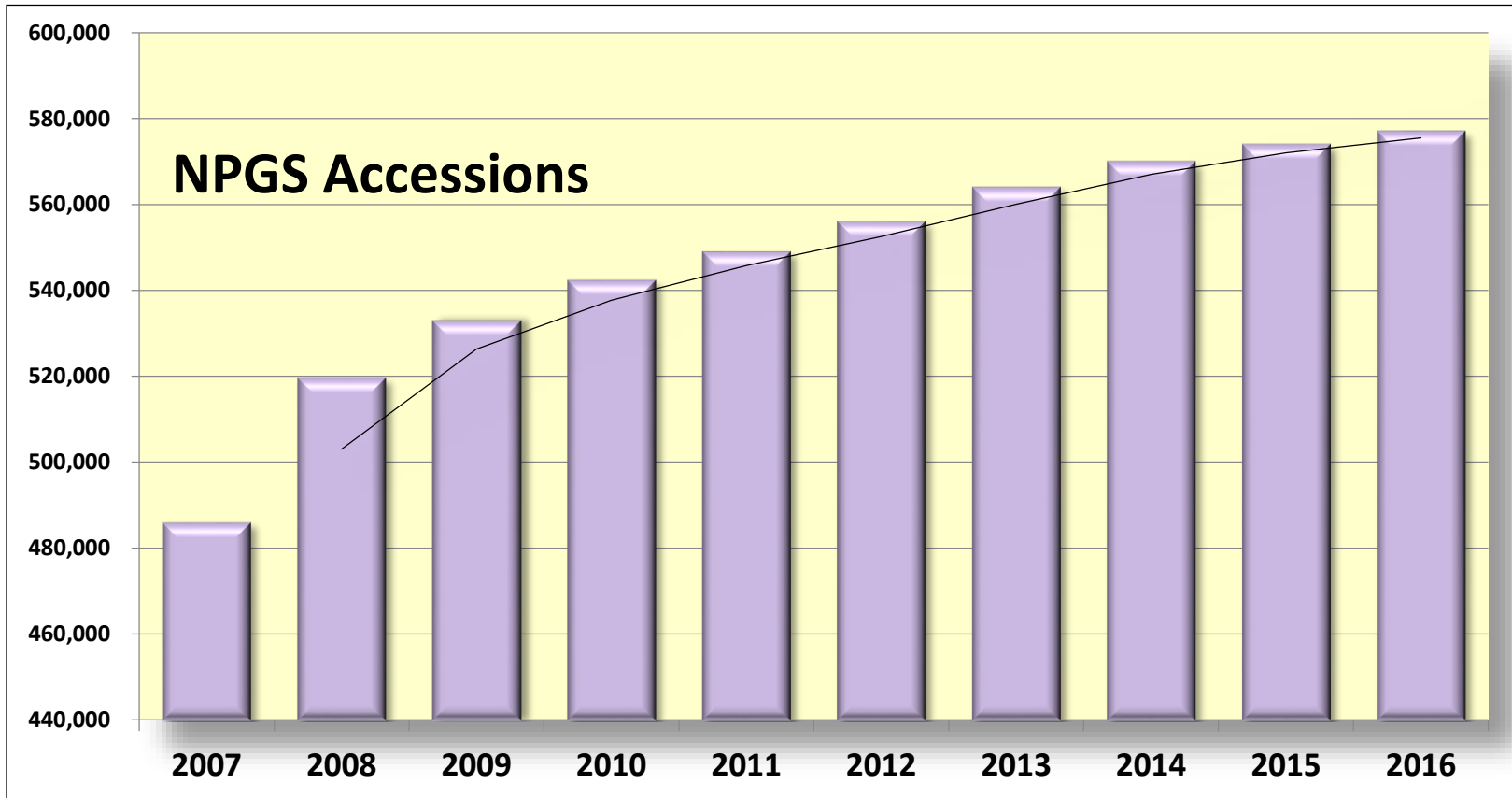
The National Plant Germplasm System: 2017 Status, Prospects, and Challenges

Peter Bretting
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1.301.504.5541

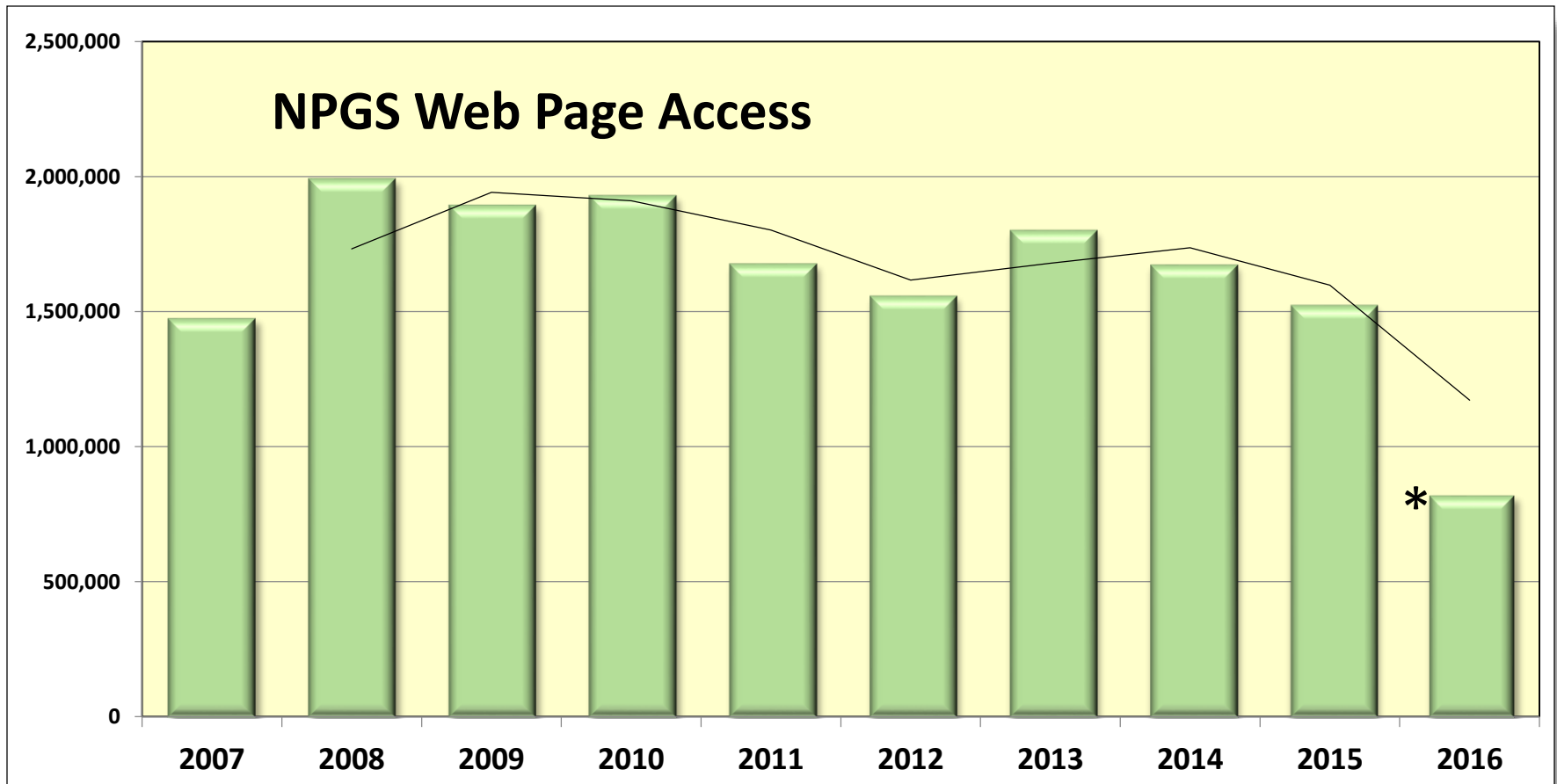
USDA National Plant Germplasm System (NPGS)



NUMBER OF NPGS ACCESSIONS 2007-2016

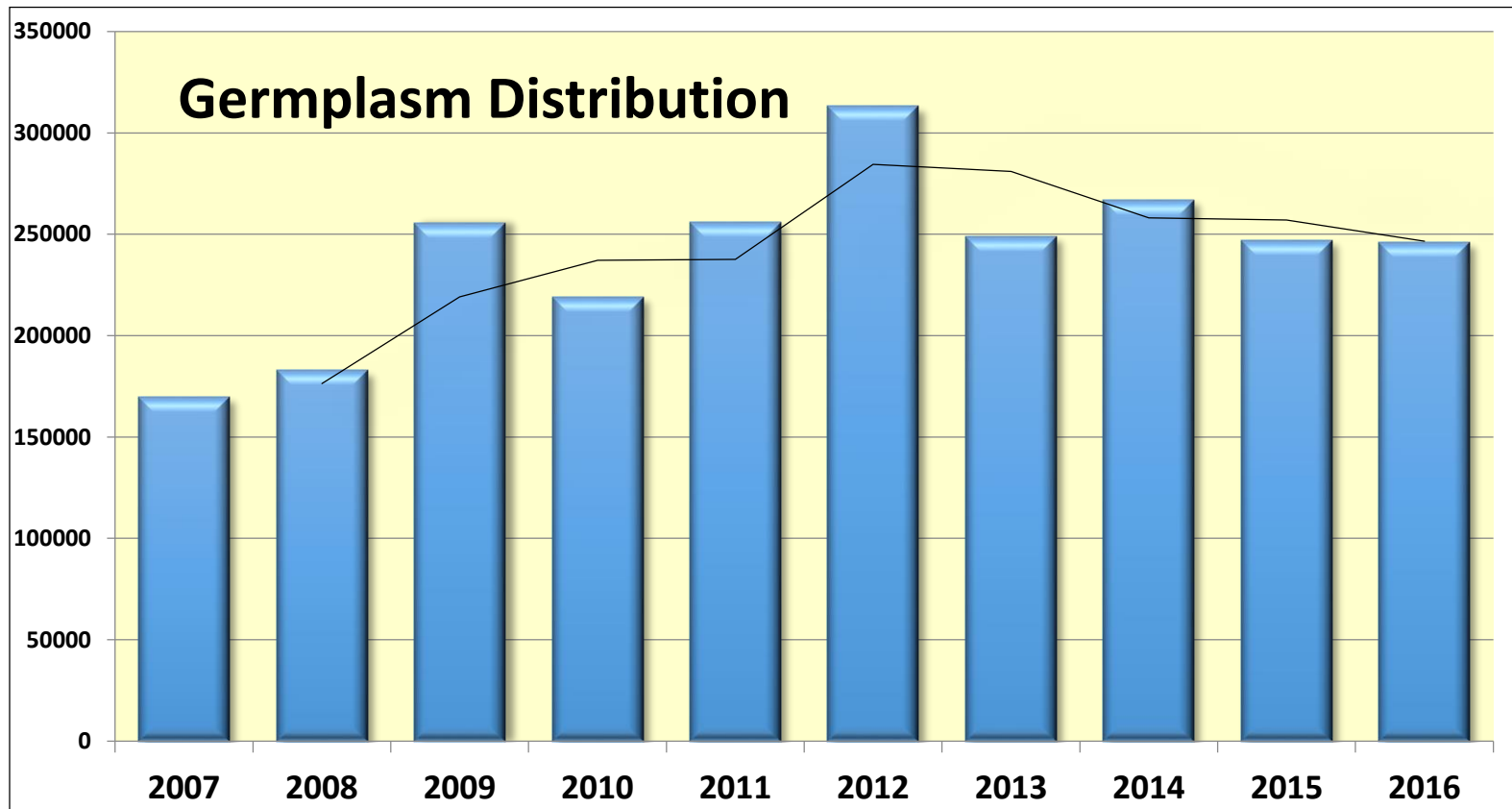


DEMAND FOR NPGS INFORMATION 2007-2016

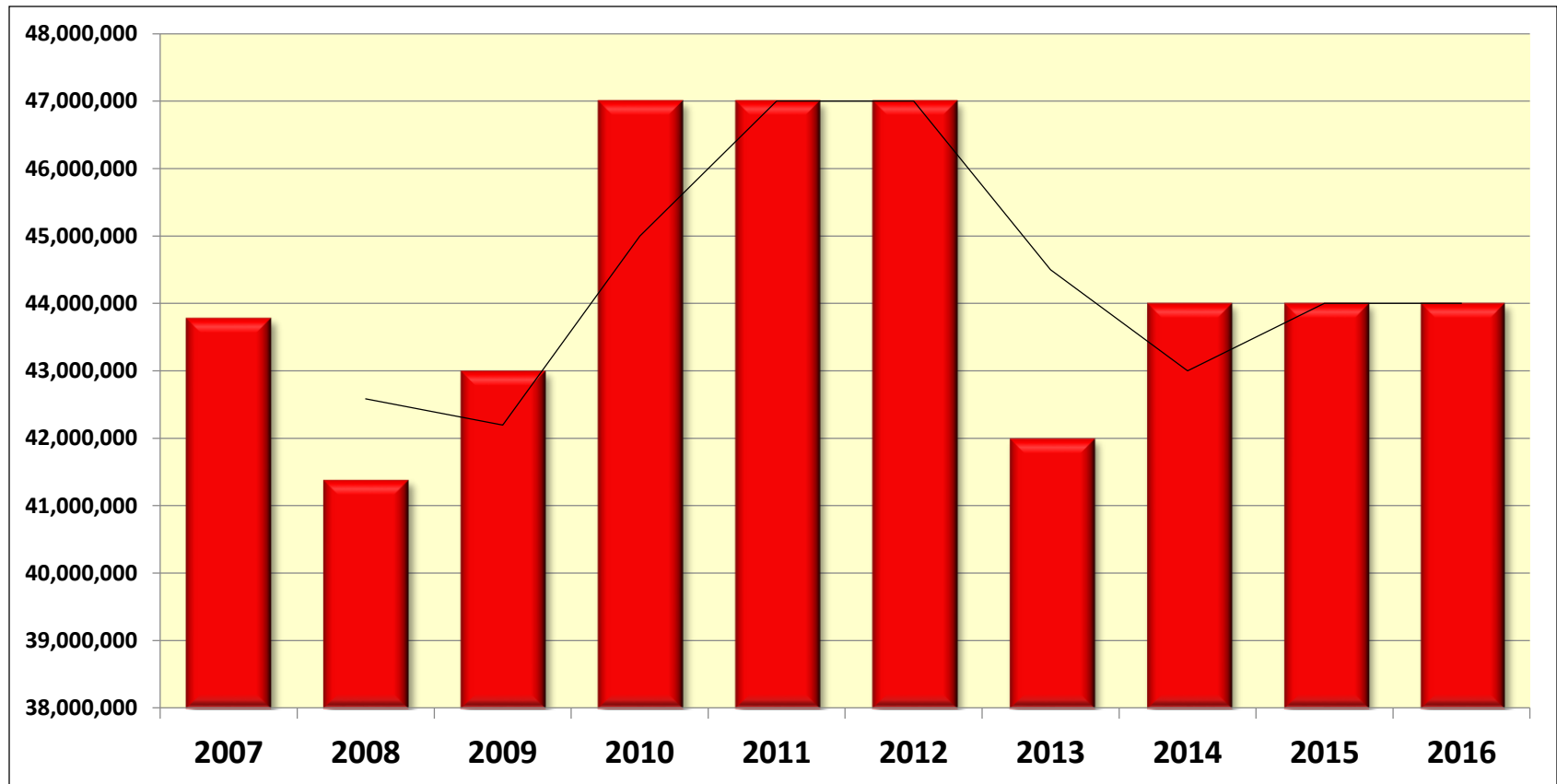


* New GRIN-Global measuring method instituted

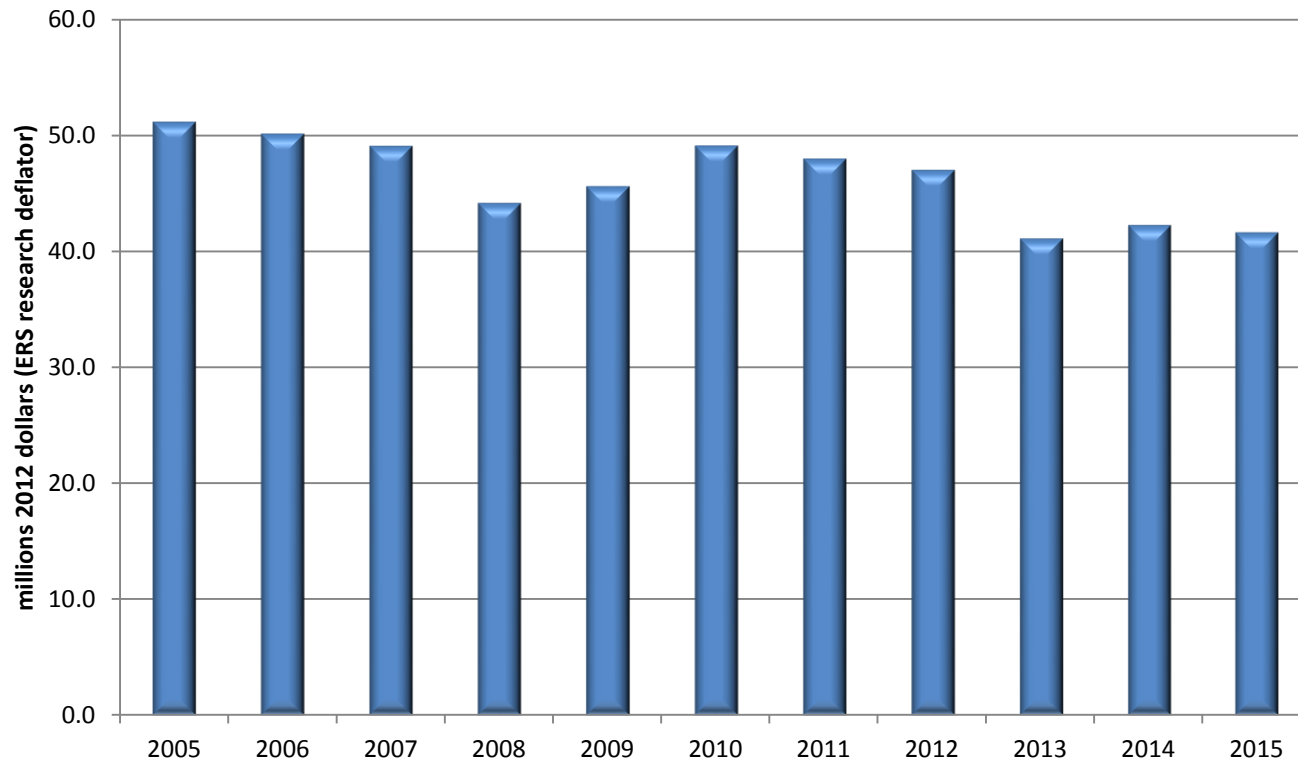
DEMAND FOR NPGS GERMPLASM 2007-2016



ARS NATIONAL PLANT GERMPLASM SYSTEM BUDGET 2007-2016



Real ARS National Plant Germplasm System Budget, 2005-2015, converted to 2012 dollars with ERS research deflator



Note: Deflator for 2015 is preliminary

Some key challenges for the NPGS

- **Managing and expanding the NPGS operational capacity and infrastructure to meet the increased demand for germplasm and associated information.**
- **Recent and upcoming NPGS personnel retirements.**
- **Developing and applying cryopreservation and/or in vitro conservation methods for clonal germplasm.**
- **BMPs and procedures for managing accessions (and breeding stocks) with GE traits and the occurrence of adventitious presence (AP).**
- **Acquiring and conserving additional germplasm, especially of crop wild relatives.**

Genetic Resource Management Priorities

- **Acquisition**
- **Maintenance**
- **Regeneration**
- **Documentation and Data Management**
- **Distribution**
- **Characterization**
- **Evaluation**
- **Enhancement**
- **Research in support of the preceding priorities**

Personnel Changes

- Farewell and best wishes to RLs Richard Percy (ARS-College Station), Randy Nelson (ARS-Urbana) and Gary Pederson (ARS-SRPIS, Griffin) for their retirements.
- Farewell and best wishes to Charlie Block, Plant Pathologist at ARS-NCRPIS, Ames who retired to take a position at the Iowa State University Seed Science Center.
- Best wishes to Tomás Ayala Silva, who transferred from the ARS-SHRS, Miami to ARS-TARS, Mayagüez to assume the curator position there.
- Welcome and best wishes to Peter Boches, new tropical crop curator at PBARC, Hilo, and Melanie Schori, new plant taxonomist for GRIN Taxonomy at NGRL, Beltsville.

2016 Retrospective Review of NP 301 Plant Genetic Resources, Genomics and Genetic Improvement

- Largest USDA/ARS National Program:
 - 155 individual research projects.
 - Conducted at more than 50 sites in the U. S.
 - More than 300 crop researchers, breeders, and curators.
- Includes all of USDA/ARS's plant breeding, plant genetics/genomics, information management, bioinformatics, plant genetic resources, plant biology, and plant biotechnology risk assessment research and service activities.
- Covers all major and most specialty crops

2016 NP 301 Retrospective Review Process

- **Composition of the Review Panel:**
 - Chair: Dr. David Bubeck, Research Director, DuPont Pioneer, Inc.
 - Eight panel members: two from AAFC Canada, six from US Land-Grant Universities.
- **Review Criteria:**
 - Assess the quality and impact of NP 301's accomplishments during 2011-2015 relative to the NP 301 Action Plan.
 - Assess whether NP 301 collaborated effectively with public and private sector partners.
- **Panel Report was delivered via seminar/webinar on 28 June 2016.**

Summary of NP 301 2011-2015 Accomplishments

- **Advanced crop genetics, molecular biology and physiology.**
- **Underpinned global crop breeding and research.**
- **Integrated global crop breeding and research.**
- **Reduced global crop genetic vulnerability.**
- **Increased global crop yield and product value.**
- **Accomplishments resulted from collaborations, and complemented private-sector efforts.**

NP 301 Retrospective Review

Panel – Fundamental Observation

- “As a collective effort, NP 301 is leading the world to exceptional innovation in Plant Genetic Resources, Genomics and Genetic Improvement. Without this program, the risk and vulnerability to U.S. and world agriculture would be substantial.”**