National Agricultural Statistics Service

NASS Expert Panel

Publication of Agriculture Census Data on Farm Operator Demographics

Report by National Institute of Statistical Sciences Technical Expert Panel
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CONTENTS

NISS Technical Expert Panel Report on

Publication of Producer Demographics from 2017 US Census of Agriculture

Preface

Following publication of the data from the 2012 United States Census of Agriculture, the National Agriculture Statistical Services (NASS) of the US Department of Agriculture reviewed feedback from stakeholders to inform preparation for the 2017 Census of Agriculture. In particular, stakeholders expressed concerns that the 2012 Census of Agriculture data did not fully reflect the roles of women and of young/beginning farmers. In response, NASS commissioned an expert panel to review and to recommend changes where needed, to the demographics section of the data collection forms. Following the report of the panel's findings, modifications to the demographics section were implemented for the 2017 Census of Agriculture. The Research and Development Division (RDD) of NASS then commissioned a second panel to consider how the demographic data should be presented in publication.

The charge to this panel was to provide specific directives for reporting the new information to be made available from the 2017 Census of Agriculture demographics while balancing the needs for information of the wide variety of stakeholders together with the practicalities of available resources and the realities of timelines for publication.

INTRODUCTION

Background

The National Agricultural Statistics Services (NASS) of the US Department of Agriculture conducts the US Census of Agriculture in years ending in 2 and in 7. After the 2012 Census of Agriculture, NASS received feedback from stakeholders who believed that the roles of women and of new/beginning farmers were not fully captured by the questions in the census questionnaire. In response to these concerns, NASS commissioned an Expert Panel of Federal Statistics on Women and Beginning Farmers in US Agriculture. Based on recommendations from that panel, NASS made major modifications to the demographics section of the questionnaire for the 2017 Census of Agriculture. These modifications include expansion of detail on decision-making and also allow reporting of multiple decision-makers. A primary motivation for these changes is the need to better document the roles of women, of young and of beginning farmers in US agriculture. It is perceived by many that the roles of these demographic groups are under-reported in existing Census efforts.

As a result of these changes, the reporting of the demographic information from the 2017 Census needs to be revised from past Census reports. The Research and Development Division (RDD) of NASS commissioned a second Expert Panel on Publication of Farm Operator Demographics from the 2017 US Census of Agriculture to provide recommendations on what to publish.

The publication of the *Report of the US Department of Agriculture Census* is consulted by a very wide range of individuals and organizations for an equally diverse set of purposes; and the data from the Census reaches an even broader audience. Within the agriculture community, producers and producer organizations evaluate current data and chronicle changes, both global and within particular agriculture sectors down to the level of specific crops, also for specific producer groups based on ethnicity or on farm size or on other sociological, demographic or agricultural factors. Within the federal government, the Census is used as the sampling frame for smaller regularly conducted surveys and for special purpose data collections. The long series of Censuses of Agriculture reports provides a much-accessed window on time trends; and Table I with summary statistics over the recent sequence of Censuses is the most often consulted table in the report. Researchers within and outside of academia use the detailed information provided by the report and by subsequent special-purpose tables when these are created following the initial report publication.

Charge to the Panel

The specific charge to this panel was to respond to six questions which collectively focused on how best to publish new or modified demographic information to be collected in the 2017 Census. The panel was also tasked with considering whether new demographic data should be bridged with prior data series. Each of the specific questions is addressed in turn in this report followed by both specific and overarching recommendations.

Six premises set the context for the panel's responses:

- The changes in data collection be reflected in reporting the 2017 Census to give a more accurate picture of contemporary US agriculture;
- The new information be presented in readily understandable form to a level of completeness comparable to the detail tables published for the 2012 Census;
- Contemporary terminology be used;
- The needs of the diverse users for these new data be met at least to the same extent as for published data from previous Censuses;
- The publication be feasible in print as well as online versions, with particular attention to feasibility of formatting (e.g., adding rows to tables is less difficult than adding columns, which in some cases would not be possible);
- Linkage of information to data from previous Censuses be adequate to relate 2017 Census data to 2012 data and to preserve the usefulness of the 2017 Census data as a sampling frame for other surveys and survey series.

Specific Questions

1) What demographic information should NASS publish on persons involved in making decisions for the farm or ranch operation?

2) How does NASS address publications in light of the specific change from single principal operator to multiple persons responsible for decisions?

3) How does NASS present to the data user the correct linkage from the 2017 Census of Agriculture data to data from earlier censuses?

4) A Farm Typology is defined utilizing the designation of a single "principal operator" and is used by the USDA Economic Research Service (ERS) for analysis. NASS also publishes some Census of Agriculture tables based on this Farm Typology. How should NASS link the farm operator data to farm typology as used by ERS?

5) The Census of Agriculture is integrated with the NASS Agricultural Resource Management Survey Phase 3 (ARMS3). Some of the analysis done by ERS is based on the "principal operator's" household. How should ERS identify the household for use in ARMS3?

6) What new tables and data presentations are needed to publish data from the 2017 Census of Agriculture decision-making questions?

MEETING OF the PANEL of TECHNICAL EXPERTS

Composition of the Panel

To address the charge while cognizant of the necessary context, the panel experts were assembled with breadth of expertise, experience and perspective. Thus the panel membership included agricultural producers of both crops and livestock, leaders of agriculture-focused organizations, federal and non-federal statisticians and economists, also researchers in statistics and in agricultural economics. Brief bio sketches of these experts appear in the appendix to this report.

Preparation, Meeting and Deliberations

The Expert Panel on Farm Operator Demographics met at NASS on 16 and 17 May 2017 to consider questions related to the publication of farm operator demographics from the 2017 Census of Agriculture in light of the changes to the data collection form from 2012 to 2017.

In advance of the in-person panel meeting, the panel experts reviewed materials prepared by NASS. These included the report of the earlier panel, the (new, revised) demographics section of the 2017 US Census of Agriculture data collection form, publications of the data summaries for the 2012 US Census of Agriculture and other documents (a complete listing appears in the appendix).

On the agenda for the panel meeting were presentations by NASS staff plus time allowed for public comment and questions before the panel began its closed session deliberations. The final session of the meeting was an immediate debriefing of the panel's findings to NASS and ERS (Economic Research Section of USDA), with opportunities for questions and clarifications.

The panel discussed at length the implications of (i) changes in the *Personal Characteristics* section of the Census form that will allow the collection of demographic and other data on up to four "persons" involved with farm decision making (rather than three "operators" with day-to-day decision making responsibility, as was the case in the 2012 Census) and (ii) the elimination of the single "principal operator" concept and subsequent adoption of questions that allow for the designation of multiple principal operators.

The panel also deliberated over the need for bridging between the 2017 and 2012 censuses because of the significant changes to the "principal operator" designation in the *Operator Characteristics* section of the Census form (renamed *Personal Characteristics* in the 2017 Census).

The panel discussed each question in turn, bearing in mind the context and the premises listed above, also taking into account information presented and points raised during the open session. In discussing individually each question in the charge listed above, the panel was also led to some broader recommendations that are relevant to multiple single questions or to planning for the future. The panel recognized that the revisions for the 2017 Census constitute a first step toward more extensive revision for the 2022 Census in order to meet the challenge of representing the full panoply of present-day agricultural structures and operations.

FINDINGS of EXPERT PANEL on FARM OPERATOR DEMOGRAPHICS

Responses to the Specific Questions

1) What demographic information should NASS publish on persons involved in making decisions for the farm or ranch operation?

NASS should publish information on <u>all</u> items in the *Personal Characteristics* section of the 2017 Census; the level of detail should be at least the same or equivalent to the level of detail published for the 2012 Census on items in the *Farm Operator Demographics* section.

2) How does NASS address publications in light of the specific change from single principal operator to multiple persons responsible for decisions?

New nomenclature should be used exclusively as attempting to redefine "Principal Operator" and/or "Operator" would be bound to lead to confusion. Replacement terminology should allow for multiple-decision makers and indication whether they are co-equal or not. Terminology should be contemporary and applicable across the full range of agricultural operations.

3) *How does NASS present to the data user the correct linkage from the 2017 Census of Agriculture data to data from earlier censuses?*

Since the concept of a single Principal Operator does not apply to many agricultural operations, this is difficult. At the same time, the panel agreed fully that the report of the 2017 Census data does need to allow examination of changes (trends) in US agriculture.

For existing tables of data from multiple censuses, especially Table 1 which is most heavily consulted, information related to personal characteristics can be expanded by adding rows to the previous format. Where data exist, particularly for the 2012 Census, entries in the new rows can be calculated from those data.

A single table bridging 2017 and 2012 Census information on personal characteristics can be created for the initial publication (Volume 1) for the 2017 Census with any other bridging tables deferred to subsequent publications.

4) A Farm Typology is defined utilizing the designation of a single "principal operator" and is used by the USDA Economic Research Service (ERS) for analysis. NASS also publishes some Census of Agriculture tables based on this Farm Typology. How should NASS link the farm operator data to farm typology as used by ERS?

Farm Typology as used by ERS currently has primary classification based on farm sales and secondary classification based on "Organizational Type" and on "Principal Operator." Therefore, the classifications of Organizational Type also need to reflect contemporary US Agriculture both with respect to family ownership and to number of people involved in decision-making.

5) The Census of Agriculture is integrated with the NASS Agricultural Resource Management Survey Phase 3 (ARMS3). Some of the analysis done by ERS is based on the "principal operator's" household. How should ERS identify the household for use in ARMS3?

When a single individual or household must be designated as in the bridging table or in ERS use in ARMS3, a substitute for "Principal Operator" is required; to the extent possible it should be consistent with this specific use. The current (as of 15 May 2017) definitions used by ERS in ARMS3 are:

- Operator: "the farmer who makes everyday decisions about the farm business"
- Principal Operator: "the one [operator] most responsible for running the farm"

Updated: Wednesday, April 05, 2017

6) What new tables and data presentations are needed to publish data from the 2017 Census of Agriculture decision-making questions?

Additional detailed tables (farm characteristics and personal characteristics) are needed for three groups: women, new/beginning farmers, and based on current demands for information, veterans also.

For each of the roles in decision-making, a detailed table is needed (farm characteristics).

A bridging table is needed to address clearly the age distribution for decision-makers (All Operators and Principal Operators of past Censuses and All Producers, All Principal Producers plus Primary Producers of 2017 Census).

Within existing and new tables, changes are needed both where principal operator's age is indicated and where additional operational type is used.

Summary of Recommendations from Debriefing

The expert panel's recommendations were first presented to NASS and ERS at the debriefing on 17 May, and are given in detail below.

The goal of the panel is to advise changes that will improve the accuracy of representation of US agriculture and of the people engaged in the decision-making.

The hope is that the new approach to collecting producer demographic data is in fact superior (i.e., more representative of industry realities) to the "principal operator" data collected in 2012 and earlier censuses. With retention of the revised demographics questions regarding "persons involved in decision making" in the 2022 Census, users will have the ability to evaluate changes in the new demographics data between the 2017 and 2022 periods.

1. **Publishing Nomenclature**

Recommendation: Replace the label "Operator" with "Producer" in all publications.

The 2017 Census of Agriculture and future censuses will use these terms: "all producers", "Principal Producers", "non-Principal Producers." These terms span the breadth of agriculture and are consistent with current terminology used by producers and by professional agriculture organizations. The term "Primary Producer" as defined below will only be used in the bridging table, and only for the 2017 Census of Agriculture.

The old terminology will appear only in Table 1 Summary Highlights and in one bridging table, as specified below. In Table 1, the row "average age of principal operator" will be retained with entries for past census. A new row will be added "average age of Principal Producers" to be from 2017 moving forward. At the

option of NASS, a second new row "average age of producers" may be considered. The change in methodology will be clearly noted for readers of Table 1.

2. Reconsideration of "Marketing" as a Functional Role

Recommendation: *Expand the list of roles in decision-making to include "Marketing."*
The panel found this omission of this important activity very unfortunate. If the inclusion of "Marketing" cannot be done for the 2017 Census of Agriculture, then this change should be implemented at the earliest opportunity as the earliest possible date for other surveys that include information on personal characteristics and should not await the 2022 Census of Agriculture. For example, other NASS surveys and the ARMS surveys conducted by ERS starting as early as 2018 could include "Marketing" in the expanded list of roles.

3. Consistency across NASS and ERS Survey Information

Recommendation: *Strive for consistency across USDA surveys and information bases.*
Starting with other NASS surveys currently in design phase and with 2018 ARMS 3, add questions to be consistent with the content of the 2017 Census of Agriculture, including changing the labels on the form to "producer." Allow multiple Principal Producers to be designated, for example by adopting language like, "a Principal Producer" and "one of the Principal Producers."

4. USDA Messaging

Recommendation: *Vigorous, immediate and broad-based messaging is required about the changed in demographic items, their rationale and benefits.*
Strong USDA messaging is required about the nature, purpose, and benefits of the refined demographic questions (i.e., focus on better capturing the roles of women, new, and beginning farmers) and the movement away from the "principal operator" concept in instances where multiple individuals (producers) play important decision-making roles.

External stakeholders (professional agriculture organizations and media, agriculture extension offices, etc.) should be engaged to the extent possible in the dissemination of this information. NASS should also start publicizing the changes now internally with specific outreach to other USDA agencies explaining what new data that will be collected and how it might impact them.

5. Publication and Access to 2017 Census of Agriculture Data

Recommendation: *NASS should publish a methodology update and implications document in conjunction with (or as close as possible to) Volume 1.*

Recommendation: *NASS should continue to advance online visualization tools so users can fully explore the rich data available from the 2017 Census of Agriculture.*

TABLES

6. Table 1 for 2017

Recommendation: Rows should be added below "Principal Operator's Average Age" for "Principal Producers: Average Age" and "All Producers: Average Age."
These same changes should be made in all subsequent tables.

Recommendation: In all tables where "Operating Arrangement" appears, it should be re-categorized as: Single Principal Producer, Joint Spousal Producers, Family Farm: 2-4 Producers, Family Farm: 5+ Producers, Non-Family Farm: 2-4 Producers, Non-Family Farm: 5+ Producers. The definitions of Family and Non-Family Farm should be unchanged from 2012.

7. Bridging Demographic Information

Recommendation: Bridging between the 2012 Census "principal operator" and 2017 Census "Principal Producer" constructs is necessary. Therefore for the 2017 Census a single reference person ("Primary Producer" is designated. Bridging tables should ONLY be produced for the 2017 Census of Agriculture cycle. Volume 1 should contain ONLY one bridging table: Age. Bridging tables may be produced for sex, ethnicity, etc. for the second wave of publications.

The algorithm to derive the Primary Producer from the 2017 Census of Agriculture form:

    i.   If only one Principal Producer is designated on the form, then use that person.
    ii.   If multiple Principal Producers are designated on the form, then apply the following algorithm to the columns of the Principal Producers, moving down the list to break a tie.
          a.   Use the person that makes the largest number of decisions
          b.   Use the person with the least time worked off of the farm
          c.   Randomly select from remaining persons
    iii.   If no Principal Producers are designated, apply the same algorithm in ii. to all persons listed on the form

Bridging Table – Census of Agriculture 2017

2012			2017			2017
All operators*	Principal operators	Non-principal operators	All producers	Principal Producers	Non-Principal Producers	Primary Producer
Rows **						

*Note: "All" refers to the up to four operators per farm for whom detailed characteristics are collected.
**Note: Rows would include the demographic characteristics from 2012 Table 57, with relabeling as appropriate for new terminology.

The nature, purpose and details of this algorithm should appear in the technical publication (Recommendation 5).

8. Specific Demographic Tables

Recommendation: Only publish 2017 data in these tables and include them in Volume 1.

Recommendation: In addition to demographic tables on operator/producer characteristics (Table 56) and on farm characteristics (Table 57) as published in 2012, add five new pairs of tables for: i) men, ii) women,

iii) new/beginning farmers (10 years or less operating), iv) young farmers (35 years old or younger), and v) veterans. Add rows to reflect the operating arrangement.

2017 Census of Agriculture - Example Farm Characteristics Table

Women Producers – Selected Farm Characteristics: 2017

Characteristics	2017				
	Any producer is a Woman	All Principal Producers are Women	A Principal Producer is a Women	Only Non-Principal Producers are Women	No Producer is a Women
Farms					
Land in farms					
Farms by operation arrangement:					
Single Producer					
Joint/Spouse					
Family – 2-4 Producers					
Family – 5+ Producers					
Non-Family – 2-4 Producers					
Non-Family – 5+ Producers					
Other Arrangements					

Note: see 2012 Table 56 for additional rows

2017 Census of Agriculture – Example Producer Characteristics Table

Women Producers – Selected Producer Characteristics: 2017

Characteristics	2017	
	All Principal Producers	All Producers
Primary occupation		
Residence on farm		
Age		
<25		
25-34		
Etc.		

Note: see 2012 Table 57 for additional rows

9. Specific Farm Characteristics Table

Recommendation: Only publish 2017 data in these tables and include them in Volume 1.

Recommendation: Publish Farm Characteristics by Operating Arrangement.

2017 Census of Agriculture
Selected Farm Characteristics by Operating Arrangement of Primary Producer: 2017

		Family Farms				Non-Family Farms		
	All Farms	Single Producer	Joint Spousal Producers	2-4 Producers	5+ Producers	2-4 Producers	5+ Producers	Other
Charact eristics								

Note: see 2012 Table 56 for additional rows (omitting the Operating Arrangement Rows since these are now the columns)

10. Decision-making question publications

Recommendation: Only publish 2017 data in these tables and include them in Volume 1.

Recommendation: Publish a personal (producer) characteristics table for each decision-making question. Add rows for categories of sex, race, ethnicity, and veteran status to these tables.

2017 Census of Agriculture

Involvement in Decision-Making by Characteristics of Producers: 2017

	All Producers	Day-to-day decisions	Land use and/ or crop decisions	Livestock decisions	Record keeping and financial management	Estate or succession planning
Principal Producers						
Non-Principal Producers						
Sex of producer:						
Male						
Female						
Primary occupation						
Farming						
Other						

Note: use rows from 2012 Table 57

11. Looking ahead

Recommendation: *For the Census of Agriculture in 2022 consider substantial changes to accommodate the vast array of farm structures.*

Recommendation: *For the Census of Agriculture in 2022 consider modern communication and media and flexibility offered by electronic data capture to enrich the base of information, to simplify for individual respondents and to accommodate greater diversity among producers.*

Recommendation: Continue to pursue opportunities for data presentation in online mode to increase options, flexibility and detailed data access for users.

Recommendation: Consider adding more specific decision-making questions (e.g. marketing) and testing the ordering. Continue to utilize extensive cognitive testing to better design the questions.

Recommendation: Consider alternatives for Estate and Succession planning as these may not be annual activities but are important in management of agricultural operations.

APPENDIX

1. Agenda
2. Expert Panel Biosketches
3. List of Background Materials

NASS Technical Expert Panel

May 16-17, 2017
1400 Independence Avenue, SW, Washington, DC 20250

AGENDA and Charge to the NASS Technical Expert Panel

Tuesday, May 16, 2017	
8:30 am	Arrive at USDA, South Building to go through Security & meet escort to meeting
9:00 am	Presentations by NASS (open to public)
12 noon	LUNCH
1:00 pm	Questions & discussion with NASS staff as appropriate (closed session) Panel deliberations (closed)
5:00 pm	Adjourn for the day
6:30 pm	Panel Dinner

Wednesday, May 17, 2017	
8:30 am	Arrive at USDA, South Building to go through Security & meet escort to meeting
9:00 am	Panel deliberations (closed)
11:00 am	Questions & discussion with NASS if desired (closed)
12 noon	LUNCH
1:00 pm	Panel deliberations (closed)
3:30 pm	Verbal summarization & discussion with NASS staff
5:00 pm	Adjourn for the day

EXPERT PANEL BIOSKETCHES

Scott Fricker
Title: Senior Research Psychologist, Office of Survey Methods Research, Bureau of Labor Statistics

Scott Fricker's areas of research include measurement error, experimental design, questionnaire and instrument design, survey product and process quality, respondent burden, cognitive interviewing, and usability.

Katina Hanson, *M.E.M.*
Title: Chief of Staff to the Associate Administrator for Policy and Programs for the Farm Service Agency

Katina Hanson is Chief of Staff to the Associate Administrator for Policy and Programs at the U.S. Department of Agriculture (USDA) Farm Service Agency (FSA). She also serves on the Executive Committee for the USDA Women in Agriculture Employee Group and as Chair of FSA's Women in Ag Chapter.

Ms. Hanson has a strong background in farm policy and programs at FSA, working previously as Senior Policy Analyst in the Office of the Deputy Administrator for Farm Programs and as the Agency Team Lead for the Biofuel Infrastructure Partnership. She has also served in multiple positions with the Conservation and Environmental Programs Division at FSA, including Planning and Analysis Branch Chief and National Program Manager for the Emergency Conservation Program. Before joining FSA, Katina worked for the USDA Natural Resources Conservation Service as a Resource Conservationist on the Watershed Planning staff in the Pacific Islands Area Office. She also worked for the State of Hawaii as the Water Quality Management Planner and is a former AmeriCorps Volunteer.

Jay Hardwick, *Ph.D.*
Title: Chairman of EWR

Dr. Jay Hardwick with his wife and sons produces 8,100 acres of cotton, corn, grain sorghum, soybean, and wheat in Northeast Louisiana. His production mission is to achieve a viable, profitable farm enterprise that strives for the ethical stewardship of all habitat and production resources with minimum impact upon the overall farm ecosystem.

Jay has been recognized for his conservation and stewardship with awards including: the Goodyear Award for Outstanding Resource Management, National Cotton Achievement Award, National Award for Environmental Sustainability, Private Landowner Stewardship Award, National High Cotton Award for conservation, EPA's Environmental Excellence Award, Garden Club of America's Conservation Award, and the USDA's Natural Resource and Conservation Service Good Land Use Award. Jay was named as one of three national cotton producers to represent the United States in Cotton LEADS, an international program committed to social, environmental, economic and regulatory factors required to produce cotton responsibly in a global environment. In 2015, Jay and Mary were awarded the National Wetlands Ward by the Environmental Law Institute at the U.S. Botanic Garden in Washington, D.C.

Jay is the past chairman of Cotton Inc., National Cotton Council, American Cotton Producers, and former secretary of the National Peanut Board. He is the current chairman of EWR, a national custom software provider for agriculture and other industries. Additionally, he serves as president of the Louisiana Independent Cotton Warehouse Association, and vice president of Newellton Gin Co. Jay is past president of Louisiana Cotton and Grain Producers Association. He is a director of Tensas Cotton Warehouse, Tensas State Bank's Farm and Livestock Credit, Tensas Concordia Soil and Water Conservation District, a member of the Louisiana Black Bear Management Program, and past advisory board member of the Louisiana Audubon Society.

Joy Harwood, *Ph.D.*
Title: Director of the Economic and Policy Analysis Staff (EPAS) at the Farm Service Agency

Dr. Joy Harwood is director of the Economic and Policy Analysis Staff (EPAS) at the Farm Service Agency, a position she has held since March 2006. Her staff offers current insights into the market and policy issues affecting commodity programs, the farm credit situation, and the Conservation Reserve Program (CRP), and is frequently called upon to brief policy officials on a wide variety of topics. EPAS analysts contribute to the monthly interagency process that produces USDA's monthly World Agricultural Supply and Demand Estimates report. EPAS is also responsible for tracking foreign investment in agricultural land under the Agricultural Foreign Investment Disclosure Act and manages the regulatory process for FSA. Prior to moving to FSA, Harwood spent 19 years at USDA's Economic Research Service (ERS), where she served as deputy director for Market Outlook from 2001 to 2006, and chief of ERS's Field Crops Branch from 1996 to 2000. Earlier in her career, she managed ERS's risk management research project where she helped analyze and assist in the development of revenue insurance and other new programs for the USDA's Risk Management Agency.

Dr. Harwood is a five-time recipient of the Secretary's Honor Award, one of the highest awards given by the Secretary of Agriculture. In 1996, she was named "USDA Economist of the Year" and in 2015, she was awarded the "Fred Woods Public Policy Award" by the USDA Economists Group. She co-taught the USDA Graduate School course, "Understanding USDA's Farm Programs" over a 10-year period with her husband, Craig Jagger, now retired, who was chief economist for the House Committee on Agriculture.

Steven G. Heeringa, *Ph.D.*
Title: Senior Research Scientist at the University of Michigan Institute for Social Research (ISR)
Dr. Steven G. Heeringa is a Senior Research Scientist at the University of Michigan Institute for Social Research (ISR). He is a member of the Faculty of the University of Michigan Program in Survey Methods and the Joint Program in Survey Methodology. He is a Fellow of the American Statistical Association and elected member of the International Statistical Institute. He is the author of many publications on statistical design and sampling methods for research in the fields of public health and the social sciences. He is the lead author of Applied Survey Data Analysis (Chapman & Hall, 2010), a comprehensive new text on methods for the statistical analysis of complex sample survey data. Steve has over 40 years of statistical sampling experience in the development of the SRC National Sample design, as well as research designs for ISR's major longitudinal and cross-sectional survey programs. Since 1985 Steve has collaborated extensively with scientific colleagues in the design and conduct of major studies in aging, psychiatric epidemiology and physical and mental health. He has been a teacher of survey sampling and statistical methods to U.S. and international students and has served as a sample design consultant to a wide variety of international research programs based in countries such as Russia, the Ukraine, Uzbekistan, Kazakhstan, India, Nepal, China, Egypt, Iran, the United Arab Emirates, Qatar, South Africa and Chile.

Doris Mold, *M.S.*
Title: President, American Agriculture Organization
Doris Mold is President of American Agri-Women (AAW) the nation's largest coalition of women in agriculture. She is an Agricultural Consultant, Agricultural Economist, Educator, and Advocate as well as a farm co-owner/operator. She is the President of Sunrise Agricultural Associates, LLC an agricultural consulting firm. Her consulting practice has included a broad range of work, including but not limited to management, business and economic analysis, business and transition plan development and coaching, evaluation, marketing, advocacy, leadership, education and organizational development. She also teaches Farm and Agri-Business Management at the University of Minnesota (U of MN) for MAST International.

She has served on national panels including the USDA-sponsored Panel on Improving Data Collection and Reporting about Agriculture with Increasingly Complex Farm Structures and the Panel on Statistics on Women and Beginning Farmers in the USDA Census of Agriculture. She has also served on and chaired the Agricultural Statistics Advisory Committee for NASS. Mold founded the AgDay365 - Ag Day is Every Day national consumer advocacy project for AAW.

Mold worked as an Agricultural Economist at the U of MN and continues to work on research/education projects with the U of MN. In 2016 Mold received the Distinguished Alumni Award from the U of MN College of Food, Agricultural and Natural Resources Alumni Society.

Mold serves in a unique position as a producer who uses the data and provides data to NASS and as an economist who utilizes the data in research, teaching and business. She has a keen interest in developing a better understanding of the roles that people play in production and broader agriculture and has conducted research on the changing roles of women in agriculture.

Brian Schilling, Ph.D.
Title: Associate Extension Specialist of Agricultural Policy within Rutgers Cooperative Extension; Associate Professor of agricultural, food and resource economics at the School of Environmental and Biological Sciences, Rutgers University

Dr. Brian Schilling is an Associate Extension Specialist of Agricultural Policy within Rutgers Cooperative Extension and Associate Professor of agricultural, food and resource economics at the School of Environmental and Biological Sciences, Rutgers University. He served previously as Associate Director of the Rutgers Food Policy Institute (FPI).

Dr. Schilling has considerable experience in stakeholder-driven research development and implementation, and educational outreach. He has worked on a wide range of academic projects, public policy studies, and policy-making bodies over the past 23 years. His recent research has focused on farm viability, farmland preservation, and agricultural economic development at the urban-rural fringe. He has been principal investigator or co-principal investigator on 32 research and educational programming grants/contracts totaling $3.4 million and served as a senior investigator on an additional 10 research grants totaling $6.3 million. As associate director of FPI, he supervised day-to-day administration of the Institute and managed more than $30 million in external research grants and contracts.

Dr. Schilling has served on nearly three dozen industry or government committees, task forces, or governing boards focused on agriculture or food-related issues. He currently serves on the USDA-NASS Advisory Committee on Agricultural Statistics. He is also a member of the State Agriculture Development Committee, the agency responsible for New Jersey's farmland preservation, right to farm, agricultural mediation, and Farm Link programs. He is a former trustee and president of the New Jersey Agricultural Society.

Richard Valliant, Ph.D.
Title: Research Professor Emeritus at the University of Michigan and the Joint Program for Survey Methodology at the University of Maryland

Dr. Richard Valliant is a Research Professor Emeritus at the University of Michigan and the Joint Program for Survey Methodology at the University of Maryland. He has over 40 years of experience in survey sampling, estimation theory, and statistical computing. He was formerly an Associate Director at Westat and a mathematical statistician with the Bureau of Labor Statistics. He has a range of applied experience in survey estimation and sample design on a variety of establishment, institutional, and household surveys. He is also a Fellow of the American Statistical Association, an elected member of the International Statistical Institute, and has been an editor of several statistical journals.

Veronica Nigh, M.S.
Title: Economist, American Farm Bureau Federation

Veronica Nigh has been the International Trade and Environmental Issue Economist for the American Farm Bureau Federation since April 2011. In that role, she is responsible for conducting research, policy analysis, and delivering information to AFBF members when shifts in policy related to international trade, environmental issues, transportation, labor, and specialty crops occur.

Prior to joining Farm Bureau, Nigh worked for the USDA Foreign Agricultural Service in the Office of Negotiations and Agreements as an International Economist. Veronica also served as an International Marketing Specialist at the Missouri Department of Agriculture. Nigh is a native of Savannah, Missouri. She holds a bachelor's degree in Agricultural Economics from the University of Missouri and a Masters in Economics from American University.

Panel convened by National Institute of Statistical Sciences
Nell Sedransk, Ph.D.

Title: Director, National Institute of Statistical Sciences; Statistics Professor, North Carolina State University

Dr. Nell Sedransk is the Director of the National Institute of Statistical Sciences and Professor of Statistics at North Carolina State University. She is an Elected Member of the International Statistical Institute, also Elected Fellow of the American Statistical Association, and a fellow of the American Association for the Advancement of Science. She is coauthor of three technical books; and her research in both statistical theory and application appears in more than 60 scientific papers in refereed journals. The areas of her technical expertise include: design of complex experiments, Bayesian inference, spatial statistics and topological foundations for statistical theory. She has applied her expertise in statistical design and analysis of complex experiments and observational studies to a wide range of applications from physiology and medicine to engineering and sensors to social science applications in multi-observer scoring to ethical designs for clinical trials.

LIST OF BACKGROUND MATERIALS

2015 Expert Panel on Federal Statistics on Women and Beginning Farmers in U.S. Agriculture (with appendices)
-- 2015 Expert Panel Background Materials
-- Report of 2015 Expert Panel
-- NASS Response to 2015 Expert Panel Report

Developing the 2017 Census of Agriculture Form
-- Questionnaire Reformatting
-- Cognitive Testing Results
-- 2015 Content Test Analyses
-- 2016 EDR Test Analysis
-- 2017 Census of Agriculture Form-Demographic Section

Census of Agriculture Products Tied to Demographic Data
-- 2012 Census of Agriculture Products Tied to Demographic Data
-- Issues Producing the 2012 Census of Agriculture Products the 2012 Census of Agriculture Products
-- Potential Solutions Considered by NASS

Publication of Similar Data by Other Organizations
-- Agricultural Surveys
-- Non-Agricultural Surveys

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