

Statement of Professional Contributions and Scholarship: Sandra M Stuttgen DVM

Situation

Taylor County agriculture generates \$972 million of economic activity representing 33 percent of the county's economy and provides employment for 36 percent of the county's workforce. Agriculture accounts for 44 percent of the county's total business sales of \$288 million (2012 economic data provided by Steven Deller, UW-Extension Community Development Specialist). Pasturing dairy and beef cattle is an excellent use of those portions of Taylor County's land which are not favorable for row-crop production. Top commodities produced in Taylor County are milk, grain, other animal and animal products, cattle and calves (including beef) and hay (Deller ranked by dollar value).

The United States Department of Agriculture (USDA) *2012 Census of Agriculture* indicates there are 967 farms in Taylor County and 91 percent are owned by individuals or families. Fifty-two percent of the farms are principally operated by farmers while 48 percent are operated by those employed off the farm. The USDA National Agriculture Statistics Service Wisconsin Field Office 2014-2015 survey identifies 239 beef farms and 224 dairy farms in Taylor County. In his report, *Contribution of Agriculture to the Wisconsin Economy: A County Level Analysis for 2012*, Deller points to the growing economic opportunity beef production and meat processing from beef and dairy cattle have for Wisconsin.

Taylor County's full-time agricultural position was eliminated after the retirement of the agent in 2003. The position was re-established at 50 percent and an agent was hired in 2005. During 2006, the newly hired agent moved to a full-time Extension position. I began my appointment in 2007 following this disruption in agricultural programming.

I began programming by using the results of the 2006 Needs Assessment my predecessor had started. I repeated the assessment in 2012 and it mirrored the findings of the 2006 assessment. Respondents (n=52) most requested dairy or beef programming about nutrition, reproduction, facilities, and biosecurity and health. Farm estate planning was also identified as a top priority. The assessments indicated the agriculture educator should provide farmers with information during group meeting/teaching events and should educate rural non-agriculturists and urban neighbors about current farming practices (**Exhibit 1**). The Taylor County Agriculture and Extension Committee's expectation was (and continues to be) that I work with farmers, not home horticulture, and that I should partner with neighboring county agents for agronomy programming. I have developed an informal reciprocal relationship with the UW-Extension Clark County Crop and Soil Agent; he answers crop and agronomy concerns that are beyond my confidence level and I answer those livestock concerns that are beyond his.

Immediately upon my appointment, Taylor County beef producers contacted me requesting relevant beef programming and help organizing a cattlemen's association. This led to my involvement with the North Central Wisconsin Cattlemen's Association (NCWCA) and eventually to my 10 percent appointment to the UW-Extension Agriculture and Natural Resources (ANRE) Beef Program Team. This team coordinates statewide beef programming. Within this team, I provide leadership in Beef Quality Assurance (BQA), Dairy-BQA, and bovine health and emergency response.

BQA and Dairy-BQA programs promote safe meat production practices at the farm level. Farmers learn about the quality assurance (QA) objectives and voluntarily certify their commitment to following the scientifically proven production practices they learned about during QA trainings. Following these principles assures consumers that their beef is wholesome, safe to eat, and raised in a humane manner. The WI Beef Council Executive Secretary and I serve as Wisconsin's QA Co-coordinators.

Response

To meet identified county and Beef Team priorities, I programmed in Dairy and Livestock (Beef) Management, and Farm and Risk Management (FARM). I used my veterinary expertise to teach best cattle management practices, which included programming to the QA objectives for raising safe and wholesome meat and milk, replacement heifer management and bovine obstetrics. My work with the UW-Extension FARM Team helped me address farm business concerns including transitioning the farm to the next generation.

Dairy and Livestock (Beef) Management: Quality Assurance

BQA and Dairy-BQA are voluntary educational certification programs developed in response to quality challenges identified from harvested cattle audits at U.S. beef processing plants. Audits are conducted every five years to monitor the progress QA education had toward improving previously identified quality challenges as well as identify emerging concerns. To maintain its integrity in Wisconsin, only UW-Extension agents conduct the in-

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person certification trainings. As a conduit to the national program, I train and support the 16 UW-Extension certifying agents. I update the standardized curriculum to reflect new data and priorities.

Certifications are renewed every three years. Initially, the re-certification process involved repeating the same program. I collaborated with ANRE Beef Team member Bill Halfman, Monroe County UW-Extension Agriculture Agent, and the Wisconsin Beef Council to award QA continuing education credits at UW-Extension workshops when topic presentations adequately addressed QA objectives. We evaluated proposed workshop presentations to determine if they meet QA standards. We began offering CE in 2015. Farmers recertify by collecting three CEUs over the three-year period their certification is valid.

Implementing continuing education credits at UW-Extension workshops promoted the value of QA, increased awareness of QA to farmers, and allowed newly identified QA priorities to be presented in a timely manner. Over 7,500 beef and dairy farmers have been exposed to QA topics during the past seven years and the number of officially certified Wisconsin farms has increased from 275 to 1,375.

I personally trained 148 beef and 139 dairy farmers for their initial certification. Those I certified in Dairy-BQA included 69 dairy and veterinary science students enrolled at the North Central Technical College (NTC) Agriculture Center of Excellence and their eleven instructors. The QA student presentation I developed for NTC was used by the University of WI-River Falls Dairy Science Department to certify 75 dairy production students in 2016. Students who participated in the Dairy-BQA program were better prepared to fulfill the expectations of the National Milk Producers Federation's (NMPF) commitment to the National Dairy Farmers Assuring Responsible Management Program. QA serves as the foundation for this mandated program. Since 97 percent of the nation's milk supply is purchased through a NMPF cooperative member, it is likely these students will follow the program on dairies they own or manage.

Market access is improved when farmers verify that they raised their cattle using QA practices. Processing plants, including JBS and Tyson, now require all farm-direct procurements of cattle include a signed QA statement. National Dairy Farmers Assuring Responsible Management certifications are entered into their national database and QA certifications are entered into the National BQA database. Both programs reported their databases are being accessed by retailers and restaurateurs, including Walmart and McDonalds, to verify the cattle that supplied the beef or dairy products they are purchasing were raised with welfare and QA standards. Such verification helps support their marketing claims for selling wholesome, safe food.

I determined long-term outcomes of my QA certification trainings from a retrospective survey of those I certified from 2012 - 2015 (n=24, [Exhibit 2](#)). Twenty-one percent strongly agreed the objectives they learned from me added economic value to their operations and they indicated they had financial records to back this claim. Forty-six percent added economic value to their operations because their QA decisions positively impacted their bottom line. Seventy-one percent of the attendees strongly valued my delivery of the objectives and 83 percent indicated they strongly recommend others attend QA trainings.

In addition to certification trainings, I programmed to the QA objectives regarding antibiotic use, biosecurity, low-stress animal handling and animal well being. Antibiotic resistance is a global public health threat; therefore, prudent antibiotic use is a top QA objective. My retrospective survey ([Exhibit 2](#)) indicated 37 percent of the respondents (n=24) did not recognize their role in the responsible use of antibiotics fed to cattle. From my National BQA and veterinary professional development, I was aware that beginning on January 1, 2017, the USDA Food and Drug Administration (FDA) would begin requiring farmers to obtain veterinary feed directives (VFD) for feed containing antibiotics and veterinary prescriptions for antibiotics used in water. It is FDA's goal that veterinary oversight of these medications, which were previously available as over-the-counter medications, will slow the development of antibiotic-resistant bacteria.

To address this identified educational need, in 2016 I developed a presentation, "What's Next with Antibiotic Use on Farms? VFDs: What/Why/How/What Next," ([Exhibit 3](#)) and co-authored the "VFD Application Summary" form ([Exhibit 4](#)) farmers can use to record their use of VFD drugs. Both are available on the Wisconsin Beef Information center (WBIC) website. I applied for a National Association of County Agricultural Agents (NACCA) Communications Award for the "VFD Application Summary" and the reviewer wrote, "Sometimes the simplest documents can be the most effective. In terms of impact on audience, I was especially impressed with how this sheet was promoted and disseminated to an audience that seems to appreciate its usefulness. Nothing fancy

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here-just clear and practical layout and content that is fast for the user and easily printable at home. I like the example on back and how it includes a scenario for how this record might be used after it is implemented.”

Four hundred and eighty-one people attended the VFD presentation and were given the “VFD Application Summary” at 14 statewide workshops. The information was either taught by myself or other agriculture educators. After participating in the workshops, attendees (n=238) cited a 1.7-point gain in knowledge for their understanding of VFDs and a 1.7-point gain in understanding their role in using VFDs. Understanding was scored using a Likert Scale; five points for very high knowledge, one point for very low knowledge (**Exhibit 5**).

Beef Vet Magazine’s article “VFD Records You Can Offer Your Clients” (Aug 4, 2016) included a link to the “VFD Application Summary” on the WBIC website. *Beef Vet Magazine* is available to 5,000 beef veterinarians and health consultants and is accessible from *Beef Magazine*. There are 40,000 beef farmers on *Beef Magazine’s* subscription list.

Maintaining a veterinary client patient relationship is critical for the prudent use of antibiotics and obtaining VFDs. “How to Develop Valid Veterinary Relationships” was an article I authored for the December 2014 issue of the *Wisconsin Agriculturist Magazine*. This article was posted to the WBIC website. Another example of my programming reach occurred when Reddy Ag Service, Inc. in Stitzer, WI, requested permission to re-print this article to their newsletter. As Reddy Ag service explained, “The newsletter is mailed to approximately 1,200 customers...We have a feed mill and as we are readying for the upcoming VFD rules to take full effect, we would like to include your article so that our customers understand that they need to make that veterinary relationship.” Reddy Ag Service found the article on the Beef2Live website where it had been re-posted by EBSCOhost Connection from the WBIC website. EBSCOhost is a database that public libraries, universities and other research facilities invest in to provide the best possible content for those searching for quality, factual information.

I used the 2016 multi-state zoonotic outbreak of an antibiotic resistant bacteria (*Salmonella enterica* serovar *Heidelberg*) to develop the QA biosecurity objective as a presentation and publication. Fifty-six individuals attended my *Salmonella* biosecurity presentation and received the publication at four Wisconsin locations in 2017. Their understanding of the material was demonstrated from a quiz administered before and after the presentation. The quiz consisted of five questions worth one point each. Those completing the quizzes (n=54) scored 2.5/5 points before hearing the presentation and 3.5/5 points after. Their scores improved by 20 percent after listening to my presentation (**Exhibit 6**).

The publication, *Salmonella Biosecurity: Protecting Yourself and Your Cattle* (**Exhibit 7**), now serves as a teaching tool for the WI Department of Agriculture and Consumer Protection (DATCP) Division of Animal Health veterinarians and Food Service personnel. It is accessible online from DATCP’s Biosecurity Page and to date has been accessed by 136 unique individuals. The publication received the 2017 Wisconsin Association of County Agricultural Agents (WACAA) First-Place State Communications Award.

Low-stress animal handling was a QA and animal welfare objective I taught and promoted at every opportunity. Handling cattle using quiet and effective techniques improves worker safety. Often, facilities need to be built or renovated to enable low-stress handling. Cow comfort is improved as facilities are modernized and comfortable cattle are better able to realize their genetic potential to reach farm production goals. Washington State Regional Extension Specialist Sarah Smith, in her 2015 publication (FS176E, ext.wsu.edu), cites peer-reviewed research demonstrating that low-stress animal handling not only improves human safety, but it also improves “animal performance (growth, feed efficiency, and reproduction), health, meat quality, and the public perception of the cattle industry (Grandin 2001 and Hemsworth 2003).”

I assisted with the design for remodeling a shed so a dairy farmer could raise heifers on her farm rather than continuing to contract with a grower. The renovation was designed to accommodate the heifer’s physical needs while making it easy for workers to handle the heifers. The remodeling cost \$14,000. Raising heifers at her farm and re-directing the \$5,000 per month contract grower charge recovered the remodeling costs in three months. The investment returned an additional \$95/heifer to the farm from improved heifer growth and breeding efficiencies (*Facility Modernization Case Studies*, p. 1 - 2 **Exhibit 8**).

Handling facilities are often lacking on beef farms. Herd health programs cannot be administered until handling facilities are built. A Taylor County beef farmer attributed his participation in my facility modernization and low-stress animal handling workshops for investing \$500 to make his facility safer. The return on his investment was

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Dairy and Livestock (Beef) Management: Quality Assurance (continued)

recaptured by two years' labor savings. His facility allows him to continue to provide a herd health program which builds his credibility for raising feeder calves that will be successful for their next owner (*Facility Modernization Case Studies*, p. 3 - 5 **Exhibit 8**).

As co-leader of the UW-Extension Dairy Team Animal Well Being Workgroup, my direction of the annual UW-Extension WI Beef and Dairy Well-Being Conference exemplified my dairy and beef management and QA programming. I led the planning and evaluation of the conference since its inception in 2010. I co-presented at three conferences, teaching dehorning using pain mitigation techniques and bovine emergency response planning for roadway accidents involving transported cattle. As the Wisconsin BQA Co-Coordinator, I secured cost-share funding from the National BQA Program to bring animal handling and stockmanship experts to the conference. The quality of the conferences' content earned the awarding of continuing education credits for veterinarians, veterinary technicians, humane officers, and American Registry of Professional Animal Scientists. The Well Being Workgroup received the 2014 ANRE Team Workgroup and Responsiveness Award. One thousand two-hundred individuals have attended the Well Being Conference since it began in 2010.

I tabulated five conference evaluations (2010 – 2014, n=791) to summarize the impact the conference provided for attendees and the cattle they manage (**Exhibit 9**). Approximately 25 percent were returning attendees and 75 percent were new to the conference. Over 90 percent of those who completed post-evaluations agreed more education concerning animal wellbeing was needed in Wisconsin. Testimonials included, "This conference is a benefit to industry, government and producers, providing good, useful, pertinent information," "Animal wellbeing is going to play a larger and larger role in how food is produced" and "We need to be proactive in adopting better animal handling/welfare practices. We can always do better." Conference evaluation details are described in my 2015 and 2014 annual accomplishment reports included on p. 33 - 36 and 45 – 47 of my tenure portfolio.

I was nominated by NCWCA for the National BQA Educator Award that is sponsored by National BQA. The value of my beef programming was affirmed when the author of NCWCA's application stated, "[Her] initial educational priorities included safe cattle handling techniques and vaccination protocols. At the time of Sandy's arrival, there was no BQA education. There was no beef education, as the emphasis of the former extension agent was dairy cattle and crops...It was a void that needed to be filled. We like to believe that the partnership of UW-Extension and NCWCA answered the need and eliminated that void" (**Exhibit 10**).

Cooperative Extension highlighted my QA work for its 2016 report to our federal stakeholders (**Exhibit 11**). "Food Safety QA-Veterinary Feed Directives" was a portion of the 2016 *Federal Report, Food Safety Planned Program* submitted to USDA National Institute of Food and Agriculture. ANRE Associate Program Director Williams stated, "Sandy's work and solid program evaluation made [this portion of the Federal Report] possible."

Dairy and Livestock (Beef) Management: Raising Dairy and Beef Replacements

I collaborated with UW-Extension Dairy Team members to determine the *Economic Costs and Labor Efficiencies Associated with Raising Dairy Herd Replacements in Wisconsin* (**Exhibit 12**). This research was reviewed by our University Extension peers in Minnesota, Iowa and Illinois. From the 2007 data, I co-authored "There's Nothing Equal When Raising Heifers" as part of a series for *Hoard's Dairyman Magazine* (**Exhibit 13**). I expanded upon herd health parameters documented by this research while programming in management practices and emerging issues which concern heifer raising. These programs included low-stress animal handling and facility modernization (**Exhibit 8** discussed above) and dehorning and deworming.

The traditional livestock husbandry practice of dehorning calves without pain mitigation is now considered to be inhumane. University research (Iowa State University and others) indicate calves are sentient beings whose wellbeing suffers from practices that cause acute and chronic pain. *The Economic Costs and Labor Efficiencies Associated with Raising Dairy Herd Replacements in WI 2015 Update* indicated the total investment to raise a heifer from birth to having her first calf averaged \$2,510. Dehorning using the pain mitigation techniques costs pennies per calf. Without pain mitigation, the dehorning process may contribute to delaying the calf's ability to thrive. As Iowa State University researcher Suzanne Millman, Ph.D. states, "Animals experiencing pain withdraw from their social companions, spend more time resting and are less interested in exploring, and for these reasons these calves will be particularly unlikely to flourish and transition..." ("Dehorning Dilemmas", accessed from <http://www.public.iastate.edu/>).

I adapted the UW-School of Veterinary Medicine dehorning/disbudding PowerPoint and created a disbudding

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Dairy and Livestock (Beef) Management: Raising Dairy and Beef Replacements (continued)

factsheet that included pain mitigation techniques. Disbudding refers to removal of the horn bud before it develops into a solid horn. The PowerPoint and factsheet were used during the 2012 WI Dairy and Beef Well Being Conference when a veterinary colleague and I demonstrated nerve block placement with conference participants as they practiced this pain mitigation technique using cadaver heads. I updated the disbudding materials found in the UW-Extension Dairy Team's Module III Calf Management Skills. My work was expanded upon in 2016 by Extension colleagues and myself when the factsheet was revised and re-named as *Disbudding/Dehorning Dairy Calves* (**Exhibit 14**). I wrote the script for a UW-Extension YouTube dehorning video which demonstrates humane disbudding (**Exhibit 15**). The video has been accessed 918 times (UW-Extension YouTube Videos Heather Schlessler channel).

I co-presented the disbudding curriculum during adult and youth tracks at the 2016 WI Dairy & Beef Well-Being Conference. The adult track was filmed by WI Public Television University Place airing on Nov 30, 2016. We determined attendees' gain in knowledge using a pre- and post-test of the material. Adults (n= 20) demonstrated a nine percent improvement in their pre/post-test scores; youth scores (n=48) improved 42 percent (**Exhibit 16**).

I was frequently asked about deworming during the 2014 UW-Extension Cattle Feeder Workshops even though it was not the topic I was presenting. At several locations on the state-wide tour, farmers wanted to know how to best deworm their cattle because they were hearing anthelmintic treatments were ineffective. To address this need identified during the 2014 Cattle Feeder workshops, Extension colleagues and I developed materials regarding gastrointestinal parasite management. My extensive literature review of this topic was published by Cooperative Extension Publications as *A4139 Gastrointestinal Parasites and Cattle in Wisconsin: Understanding and Managing the Relationship* (**Exhibit 17**). I co-presented the publication's contents during the 2015 state-wide UW-Extension Cow-Calf Workshops. Two hundred fifty people attended these cow-calf workshops and from the post-presentation evaluation, 95 (81 percent) indicated they would implement what they learned on their farms. The deworming feature article I wrote for the *Wisconsin Agriculturist* magazine (**Exhibit 18**) was selected for a 2017 Regional First-Place NACAA Communication Award. Reviewers rated this article as "overall, [an] excellent and compelling article."

Dairy and Livestock (Beef Management): Bovine Obstetrics

Delivery of the calf begins the productive life cycle for both dairy and beef farms. Injury or death of the cow or newborn calf represent major economic losses. Beef farmers are typically less experienced dealing with calving problems than dairy farmers. Unlike most dairy farmers, who assist calving cows nearly every week, all the cows in beef farmers' herds usually calve during a narrow time interval once a year. Beef calves are usually smaller and easier for the beef cow to deliver. However, when difficulties arise, it is often an emergency which requires veterinary assistance. Veterinarians may be reluctant to tend to beef operations that lack adequate handling facilities as doing so increases their risk of personal injury. Both dairy and beef neonatal calf health can be challenging.

I taught bovine obstetrics to beef and dairy farmers using a hands-on demonstration model I built (**Exhibit 19**) and the *Three Stages of Bovine Parturition* factsheet I authored (**Exhibit 20**). Both served as foundational pieces for my *Save-A-Calf Workshop* during which I also taught neonatal health management. To determine the impact of my obstetrics program, I surveyed attendees seven months after the 2016 *Save-A-Calf Workshop* (**Exhibit 21**). Three hundred and twenty cows were managed by the nine farmers responding to the survey. Respondents noted, "[The class] has helped me to identify problems much faster. Also, the hands-on calf presentation gives a better feel for how to deliver a calf when necessary" and "I now know how to tell a calf's position in a cow and how to properly deliver a calf if needed, and how important it is to make sure that the calf nurses as soon as possible after birth."

Calving intervention occurred for one-third of the cattle represented by the survey respondents. Sixty-seven percent of the respondents indicated they were better prepared to determine the calf's presentation because of having attended the *Save-a Calf Workshop*. After correctly diagnosing the presentation and attempting the delivery, one person reported knowing when to stop and call for veterinary help. This is a very important outcome as producers must know when they need help. They should not guess and make a calving situation worse.

The *Save a Calf Workshop* post-evaluation also indicated that 75 percent were considering changes to their maternity area. Sixty-three percent changed or were planning to change newborn's immunoglobulin (IgG)

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Livestock (Beef Management): Bovine Obstetrics (continued)

consumption. Sixty-three percent were working on calving protocols and purchasing equipment to be better prepared for calving events. Fifty percent added or changed sanitation measures in the maternity area or were discussing sanitation measures with their peers and other advisors (**Exhibit 21**).

I am collaborating with Liz Binversie, Brown County UW-Extension Agent, to develop a series of bovine obstetric YouTube videos. The *Three Stages of Bovine Parturition* factsheet serves as the script for these videos. The English and Spanish versions of the first video titled “Properly Applying Chains to Feet and Legs” has been viewed 225 times (UW-Extension YouTube Videos Agriculture Podcasts **Exhibit 22**). Teaching obstetrics led to my work preparing the *Wisconsin Ideal Maternity Pen* factsheet (**Exhibit 23**). David Kammel, Ph.D., UW-Madison Professor of Biological Systems Engineering and I collaborated to display the *Ideal Maternity Pen Display* during the 2012 - 2014 Farm Technology Days.

Dairy and Livestock (Beef) Management and FARM Programming: Taylor'd Ag Newsletter

I created and published the *Taylor'd Ag Newsletter*, to address the county identified priority for providing producers with information and educating rural non-agriculturists and urban neighbors about current farming practices (**Exhibit 24**). Within the newsletter, I wrote articles, and highlighted my publications and other university resources regarding best dairy, beef and FARM management practices. I also directed readers to additional resources in areas such as horticulture and agronomy. I built Extension presence by informing readers of my local and area Extension events.

The *2016 Evaluation Survey of Agriculture Programming Long Term Impacts*, p. 6, indicated 82 percent of those receiving the newsletter were reading it. Thirty-five percent used it to help make management decisions on their farms or agricultural endeavors (**Exhibit 25**). Readers wrote, “I look forward to the newsletter,” “The newsletters are extremely educational,” “I read your publication and gain information on a broad range of topics” and “Thank you for keeping us informed of upcoming events and things that change over the years.” My newsletter was selected as the 2016 National Winner for Newsletter by Individual by the National Association of County Agricultural Agents Association (NACAA).

Farm and Risk Management (FARM)

Farming is a business and to be sustainable farmers must adopt good business management practices. Financial recordkeeping is often the task of the farm's female partner. These women become better equipped to help their farms succeed when they understand financial vocabulary, record-keeping systems and decision-making tools. Designed for farm women, *Annie's Project* uses a six-day curriculum to teach financial literacy. I taught record-keeping and business goal setting during *Annie's Project* workshops. Using feedback from workshop evaluations, my Extension colleagues and I adapted the curriculum to two days, targeting the information most requested by the previous attendees. I created and taught “Understanding the Financial Model” during a two-day *Annie's Project* (**Exhibit 26**).

I collaborated with the UW-Center for Dairy Profitability to develop and pilot a new two-day workshop titled *Heart of the Farm: Farming Your Finances (FYF)*. At my suggestion, the curriculum used a dairy farm ownership case study to illustrate the business planning needed for farm succession. I designed and taught “Understanding the Farm Balance Sheet” at the pilot *FYF*. The workshop evaluation indicated average attendee's understanding of balance sheets was 2.3/5 before hearing the presentation and 4.1/5 afterwards (using a Likert scale, five points indicate being strongly agree, one point indicates strongly disagree). Knowledge increased 1.8-points after participating in my presentation of the balance sheet. Written comments included, “[The] workshop was put together very well,” “I would like to come back for more classes; speakers answered all questions thoroughly” and “Stuttgen relates to each person at the workshop” (**Exhibit 27**). I have since developed the “Heart of the Farm Financial Series: Farm Balance Sheet” as a two-part factsheet series (**Exhibit 28**).

I surveyed the pilot *FYF* participants six months after the workshop to determine how they were using the material and if the knowledge gained from the workshop has resulted in an economic impact for their farm. Three of the nine attendees (33 percent response rate) reported discussing what they had learned with other farm partners, “My husband and I can visualize better why certain items are not profitable to continue” and “I better understand how the numbers of the farm work and how to use them for planning/decision making.” Additional responses included, “I have reviewed my farm's Balance Sheet and Income Statement which another prepared” and “I

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Farm and Risk Management (FARM) (continued)

created my own Income Statement using my farm's Schedule F, and I calculated my farm's debt to asset ratio and rate of return on assets." Participating in this workshop has allowed their understanding of "the difference between tax return preparation numbers, lending officer numbers, and productivity numbers," "why my loan officer needs the information they do" and "understanding my book work/accounting better." One attendee used the information she learned while making a business plan to expand her current small business.

Heart of the Farm are one-day workshops for farm women during which farm financial and risk-management topics are presented. I taught financial record-keeping and co-facilitated *Heart of the Farm* in 2012 (32 attendees) and 2014 (22 attendees). Follow-up evaluations, performed by the UW-Center for Dairy Profitability, indicated 75 percent of the respondents used information presented at the workshops. I was lead facilitator of a 2017 multi-county, multi-program area *Heart of the Farm* for 16 attendees. UW-Extension agriculture and family living agents from Taylor, Clark and Marathon Counties presented at this workshop. We shared our joint-programming experience at the 2017 Wisconsin Joint Council of Extension Professionals Conference.

I formed the North Central Farmwomen's Network (NCFN) after facilitating a 2010 *Effective Outreach for Wisconsin's Women Farmers* focus-group with Sharon Lezberg, Ph.D., who at the time was an Associate Scientist at the UW-Madison Environmental Resources Center. The farm women attending Dr. Lezberg's focus group stated they would like to establish a local network that would allow them to more efficiently sustain their farm business.

NCFN was my first grant writing experience with multiple non-Extension partners. As a non-structured women-led group, NCFN met quarterly during lunchtime sessions I facilitated. When describing the importance of NCFN, participants wrote, "NCFN is helpful to me as a way to meet and talk to other women who struggle with the same or similar issues. Socially, many farm women feel isolated and this can reduce or eliminate that" and "Balancing farm, family, finances, community and home-keeping; we face unique situations that are not often addressed through conventional women's groups." I presented my work facilitating NCFN during the 2012 UW-Extension ANRE Conference and at the 2012 Women in Agriculture Educators National Conference in Memphis, Tennessee ([Exhibit 29](#)).

To meet the identified county priorities regarding farm estate planning, I facilitated several workshops including *Shifting Gears for Your Later Farming Years*. This workshop was designed to help farmers with their retirement planning as they transfer their farm to its successors. I co-hosted this program in 2012 (18 attendees) and 2014 (11 attendees). I adapted and co-presented "How Much Gold for the Golden Years" during both workshops. This presentation discussed how to estimate financial needs during retirement. Post-workshop evaluations indicated an average 1.2-point increase in knowledge from both years' presentations. The same Likert scale evaluation form was used both years, five points indicated a strong level of knowledge and one point indicated a low level of knowledge.

I followed up with the 2014 *Shifting Gears for Your Later Farming Years*' attendees two years later to determine what retirement goals they had accomplished since attending the workshop. From their 2014 pre-workshop evaluation, 100 percent stated they were thinking about developing financial goals for their retirement years and none had yet written financial retirement plans. Two years later, one family had developed a plan. As indicated by the 2014 pre-workshop evaluation, 30 percent of attendees agreed that estimating their retirement financial needs was important; but two years later, none had done estimates. FARM Team colleagues and I are currently engaged in focus group research with the UW-Center for Dairy Profitability to refine our role for how we can better motivate farmers to act upon their retirement and farm transition plans.

Dairy and Livestock (Beef) and FARM Programming Long Term Impacts

In 2016, I contacted those who had participated in my dairy and livestock (beef) programming and FARM programming to determine the local outcome and impact of my work, *Evaluation Survey of Agriculture Programming Long Term Impacts* ([Exhibit 25](#)). As evidenced by the quadrupled response from initial assessments, five percent response rate in 2012 and 22 percent in 2016, I have successfully established many relationships and have built the UW-Extension agricultural presence in Taylor County. Testimonials (p. 12 -13) include, "[Sandy is an] excellent resource, setting the standard for other counties to follow; wealth of info and common sense," "Sandy pointed us to utilizing DHIA, Johnes testing and fecal testing which has really boosted our bottom line" and "I feel that with her aid, many area beef producers have moved from an expensive hobby to a

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Dairy and Livestock (Beef) and FARM Programming Long Term Impacts

profitable sideline. This brings value to many acres, that were unsatisfactory for profitable crop production, back to uses that expand the economy of our county.” Other respondents wrote, “We have been able to make better decisions on vaccination and treatment protocols thanks to her information” and “My beef herd has improved genetically with higher weaning weights; BQA and low stress handling have improved the herd disposition. Vaccination protocols and intensive grazing have increased my profitability.”

Respondents were asked to reflect upon dairy and livestock programs they had participated in and these programs are ranked by their selection frequency in Table 8(b) on p. 8 of the *2016 Evaluation Survey of Agriculture Programming Long Term Impacts* (**Exhibit 25**). Low stress animal handling was most selected by all respondents (n = 95); 44 made decisions for their farms because of the low-stress animal handling information they had learned and 19 discussed the information with other advisors/peers. The impact of my low-stress animal handling programming occurred as thirty-two respondents made decisions for their farms and discussed what they learned with their advisors and peers, disseminating the information during those discussions.

Facility modernization was least selected overall (n = 51), but had the most impact for those selecting it. Forty-three percent of those participating in facility modernization programming made decisions and discussed the information they had learned with other advisors and peers. My dairy or beef vaccination protocol and deworming programming ranked second and third highest in overall impact, respectively.

Also, as indicated in Table 8(b) of the *Evaluation Survey of Agriculture Programming Long Term Impacts*, the largest percentage of respondents who made decisions for their farms occurred from my dairy replacement raising programming. At 58 percent, this percentage was greater than the percentages making decisions from all the other programs I had asked respondents to consider. At 54 percent, the second highest outcome occurred when respondents selected, ‘I made informed decisions for my farm regarding dehorning protocols’.

As indicated in Table 9(b) on p. 10 of the *Evaluation Survey of Agriculture Programming Long Term Impacts* (**Exhibit 25**), determining cost of production and other financial ratios was most selected by all respondents (n = 77). The largest outcome and impact occurred from this programming as 21 percent made informed financial decisions for their farms from this information and 13 percent made decisions and discussed the information with their advisors and peers. The next largest programming outcomes and impacts occurred from those utilizing my programming for farm succession planning and business planning to determine long and short-term goals.

Looking Forward

I am invigorated by the successes farmers have from my programming. I know I have accomplished great work when the NCWCA President stated in the National BQA-Educator application, “I...have gained much knowledge about the cattle industry and what a successful group of cattlemen, led by Dr. Stuttgen, can accomplish. I bring these things to your attention, because I feel they are a direct result of Dr. Stuttgen getting involved with us. Her leadership skills have flowed out to other members and organizations, which has brought much more awareness across the cattle industry...she has not only implemented some of the UW-Extension programs, but has also helped in creating them” (**Exhibit 30**).

Opportunities for my creative programming abound. The current National BQA Quality Audit was recently released and it indicates that bruising continues to be a quality and welfare concern. My Extension colleagues and I created a quality assured livestock transportation program in 2016 which address bruising. It was piloted as a display at the 2016 Farm Technology Days and was taught during the 2017 Well Being Conference. We are now working to create a Wisconsin quality assurance certification program for safe livestock transportation. I continue to encourage farmers to raise their level of transparency concerning their husbandry practices by accepting the challenge identified by a previous Well Being participant, “It’s not only about telling our story, it’s also about changing culture or practices which are not scientifically or ethically acceptable” (**Exhibit 9**).

Our preliminary farm succession focus group research indicates that farmers know they must have a financially strong business that can support the outgoing and incoming families as they begin the succession process, yet some do not understand how to determine the strength of their farming business. I am responding to this identified need with ongoing *Farming Your Finances (FYF)* curriculum development. I am planning to adapt *FYF* for those raising beef to address the growing economic opportunity beef production has for Wisconsin as discussed by Deller in his 2012 county-level analysis, referenced above on p. 1 of this document.