

V(A). Planned Program (Summary)

Program # 6

1. Name of the Planned Program

Human Health And Human Development

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	20%		15%	
704	Nutrition and Hunger in the Population	20%		15%	
724	Healthy Lifestyle	10%		10%	
802	Human Development and Family Well-Being	20%		30%	
803	Sociological and Technological Change Affecting Individuals, Families, and Communities	0%		10%	
805	Community Institutions, Health, and Social Services	10%		0%	
806	Youth Development	20%		20%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	17.0	0.0	5.0	0.0
Actual Paid Professional	0.3	0.0	4.5	0.0
Actual Volunteer	0.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
994739	0	1279095	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
994739	0	1279095	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
5218205	0	4776779	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Activities included an exploration into how Latino parents balance old and new ideas and ways as they raise adolescents in different contexts in the U.S., the collection of ethnographic and ethno-historical archive data for a study focusing on the impact of youth participation discourses, policies, and actual practices of youth participation, the optimization and validation of behavioral procedures for testing learning and memory in the pig and the development, optimization, and implementation of a set of three MRI sequences that permit structural and neurochemical characterization of the piglet brain [techniques that continue to deepen our knowledge about short- and long-term effects of early-life choline sufficiency], a study to determine the efficacy of dietary tomato and soy germ, alone and in combination, for the inhibition of prostate carcinogenesis in the transgenic adenocarcinoma of the mouse prostate [TRAMP] model, studies that contribute to our understanding of how low levels of genestein impact progression of estrogen-dependent breast cancer to estrogen-independent breast cancer in a well-established pre-clinical model of breast cancer, and utilization of the **Child Development Laboratory Research Database** by 21 research projects representing a diverse array of disciplines [including human development and family studies, advertising, anthropology, landscape architecture, art and design, nutritional sciences, communications, community health, and music education].

Activities also included efforts to improve the quality of programs for high-school-aged youth by gaining knowledge of the strategies used by effective program leaders in the varied challenging situations of their work [this information will be useful for training new leaders and provides a foundation for future research on youth practice], research focused on examining both the antecedents [marital quality, co-parenting, and parental physiological response to child cues] and outcomes [the child's pro-social behavior and peer competence] of child-mother and child-father-attachment security, a study that contributes to existing empirical knowledge by teasing out the complexities of separating in the context of violence versus no prior history of violence [the study also adds to our knowledge regarding the role of different types of violence in different post-divorce co-parenting experiences], activities supporting the **STRONG Kids2** program [with funding from the Dairy Research Institute, a birth cohort study of 400 families will be launched to examine the interactions between individual biology of the infant, mother, and home food environment to establish nutrition habits in the first three years of life] and the **Illinois Childhood Activity Program** [this interdisciplinary workshop series supported by the National Cancer Institute aims to identify new methods of assessing physical activity in preschool age children in their natural environments], research results that demonstrate the potential of apigenin and luteolin to protect against pancreatic carcinogenesis and provide the foundation for future studies in this area, and work to determine how socioeconomic factors including employment, income, and marital status impact early cognitive, behavioral and socio-emotional development [paying particular attention to the mediating role of maternal mental health and parenting behavior and to examine how work schedules including non-standard work hours

influence early development].

Activities also included continuation of the PONDER-G project [**Prevent Obesity and Nutrition-related Diseases: Environmental Resources and Genomics**] with the goal of establishing and recognizing the basis of predictive, preventive and personalized interventions in the context of obesity, continuing development of the **Healthy Outcomes for Teens [HOT]** interactive website, research findings that will improve our understanding of the mechanisms of soy products that reduce colon cancer risk and facilitate the identification of molecular markers, especially epigenetic markers, associated with colon cancer development, and a study aimed at investigating the effect of genistein on liver metastases derived from colon cancer and its molecular mechanisms.

Conference presentations included the Joint Council of Extension Professionals Galaxy Conference, National Training Webinar for Extension Professionals, National Council on Family Relations, Agricultural and Applied Economics Association, American Ethnological Society, Association for Political and Legal Anthropology, American Psychological Association, Implications of Research on the Neuroscience of Affect, Attachment, and Social Cognition Conference, Illinois Council on Family Relations Conference on Family Well-Being, Society for Research in Child Development, Institute of Food Technologists, Korean Society of Food Science and Technology, American Sociological Association, American Dairy Science, Experimental Biology, American Society for Nutrition, American Society for Biochemistry and Molecular Biology, and the Midwest Cancer Nanotechnology Training Center.

This past year saw increased delivery of programming that addressed brain health that was offered as a four-part series sequenced to provide information on strategies and techniques for building a better memory, learning about how brain health is directly related to body health and how to maintain that health, exploring and practicing several exercise strategies to challenge the brain, and partnering with the Alzheimer's Association to inform participants about memory loss, dementia and diagnosis of Alzheimer's. Each segment of the series [**Building a Better Memory for Everyday Life, FIT WITS, and Head Strong**] was also offered to meet the needs of various audiences. In addition, a four-part **Gardening for Your Brain** series was created representing an interdisciplinary format.

Simplify Your Life: Clear the Clutter & Your Stress workshops were developed and delivered at 16 locations in the state to Illinois Municipal Retirement Fund retirees as well as to other local audiences. Resources related to aging and retirement were also available through **Long-Term Care: Talking, Deciding, and Taking Action**, an educational series and website that includes both family life and financial management topics for helping individuals and families plan effectively for their needs as aging adults and through **Plan Well, Retire Well**, a comprehensive program featuring a website, a blog, e-news, and monthly news articles. **Share Your Life Story**, a multi-week life series, provided a therapeutic approach to life renewal. Additionally, Extension educators [nutrition & wellness, family life, and consumer economics] reached out to all counties statewide by offering similar older adult focused 'healthy living' programs. For example, an interdisciplinary series of 101 programs titled **Learning is Timeless** was delivered at the Urban Leadership Center in Chicago to help 1,309 participants develop skills in health, family life, consumer economics and money management, and horticulture to reduce stress and promote better mental and physical health.

Extension Family Life educators also conducted multi-session programming on parenting and adult caregiving. **Parenting 24/7** is a one-stop source of research-based information on the web that includes articles, breaking news and commentary, links to other resources and video clips of real parents of children from birth through the teen years and focuses on challenges and solutions. **Just in Time Parenting** is an age-paced electronic newsletter that is the product of the national **eXtension** network of parenting and child development experts who provide online support to parents and professionals and is distributed every month from birth to 12 months, and then every two months until the child is five years old. Access was also provided to **Your Young Child**, a research-based curriculum and set of customized

that help parents of infants and toddlers manage seven difficult stages and behaviors that are linked to child abuse and neglect and **Parenting Again** topic-based discussion guides for grandparents raising grandchildren. The **Intentional Harmony: Managing Work and Life** curriculum and web-based self-study focusing on nurturing adult relationships continued to be offered.

Most Extension activities that address healthy food choices to prevent childhood obesity were delivered by **Expanded Food and Nutrition Education Program** [EFNEP] staff and **Supplemental Nutrition Assistance Program Education** [SNAP-Ed] staff who conducted hands-on activities with children and their parents from limited income families. SNAP-Ed Extension staff members reached 443,000 youth who were taught healthy eating choices and 5,300 youth were reached through EFNEP in 2013. The SNAP-Ed and EFNEP staff used the **CATCH** and **SPARK** curricula to educate elementary and preschool students in after-school and summer programs about healthy snacks, good nutrition, and the importance of physical activity. **OrganWise Guys** materials were used by SNAP-Ed staff with youth in K-2nd grade classrooms and by EFNEP staff in 3rd through 5th grade classrooms. Under the leadership of the 4-H Youth Development staff members, the **Health Jam** program was conducted for 5th graders and offered support related to exercise, wellness, nutrition, and health career information using an experiential learning approach. Additional information about the programs and their impact is included in the evaluation section of this planned program. **Healthy Hopping**, a website with more than 60,000 page views, focused on increasing the physical activity of youth as well as providing recipes for healthy snacks to increase the consumption of fruits and vegetables. Lesson plans for teachers and jump rope stunts, rhymes and games for youth are also available on this website. The site can now be accessed via a mobile app.

Extension programs also focused on chronic diseases including heart disease and diabetes. **I on Diabetes** was taught as a four-part [2 and 1/2 to three hours per part] Extension program that combined lectures, food demonstrations, activities, and samples of healthy foods. Two websites also made information available to the public. **Diabetes Lifelines**, a bi-monthly web-accessible newsletter provided information in both English and Spanish to clientele on a variety of diabetes-related topics [<http://www.urbanext.uiuc.edu/diabetes>] [more than 70,000 English page views and nearly 104,000 Spanish page views recorded for this past year along with more than 9,000 app connections]. Two additional websites, **Your Guide to Diet and Diabetes** and **Diabetes Recipes**, logged more than 263,000 English page views and more than 83,000 Spanish page views. The **Meals for a Healthy Heart** program is a two-part series focused on increasing participant awareness of the risk factors of coronary heart disease, hypertension, high blood cholesterol, and other warning signs. Activity level and weight management information as well as food demonstrations, taste testing, and recipes were provided.

2. Brief description of the target audience

Members of the target audience included parents, faculty and graduate students engaged in leadership education research, biological chemists, professionals focusing on food science and human nutrition, students, commodity groups, breast cancer survivors, health care professionals, scientists in family social science, human development, human nutrition, and applied family work with a focus on child health and wellbeing, graduate and undergraduate students in training with an interest in child health and wellbeing, clinicians and practitioners focused on children and families, mothers who co-parent after separation [including those who do and do not experience intimate partner violence], faculty and postdoctoral researchers in human development and family studies, nutritional sciences, agricultural economics, community health, and biological sciences, daycare providers and practitioners in education [school administrators, principals, and teachers], and researchers, epidemiologists, and others concerned about health and food products. In addition, Extension is targeting youth, teachers, parents, grandparents, caregivers of adults, retirees, and working couples.

3. How was eXtension used?

Ten Extension faculty or staff are members of eXtension Communities of practice that include Alliance for Better Child Care, Families, Food, and Fitness, Family Caregiving, Just in Time Parenting, and Military Families.

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	37081	32581	24341	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2013

Actual: 4

Patents listed

TF 11130-PRO [Plant Produced Immugens And Methods For Making]; TF 12004-PRO [Modulation of Immune Function by Dietary Bovine Lactoferrin]; TF 12192-PRO [Biosynthesis of an Oligosaccharide Using Escherichia Coli]; and TF 12209-PRO [Estrogen Receptor Alpha Inhibitors].

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	34	34

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Number Of Completed Hatch Projects

Year	Actual
2013	3

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Number Of Research Projects Utilizing The Child Development Laboratory Research Database
2	Increased Knowledge Of Children's Behavior At A Given Stage Of Development And Parenting Practices To Foster That Behavior
3	Numbers Of Individuals Taking Recommended Actions To Manage Heart Disease And Diabetes Through Planning Menus/Choosing Foods Using The Food Guidance System
4	Delineating The Role Of Individual Nutrients, Especially Those Involved In A Multitude Of Biological Functions Such As Choline
5	Investigating The Ability Of Tomato Powder, Broccoli Powder And Soy Germ To Reduce The Progression Of Prostate Cancer
6	An Evaluation Of The Effect Of Dietary Botanical Estrogens On Breast Cancer Growth And Progression
7	Extension Of A Successful, Evidence-Based Approach For Strengthening Prosocial Sibling Relationships
8	Determining The Efficacy Of An Encapsulated Probiotics Delivery System In Selected Food Products Using Simulated GI Tract Models
9	An Examination Of How Family Conditions And Social Institutions Impact Early Developmental Processes
10	Development Of Dietary Strategies To Significantly Reduce Both The Incidence And Mortality Of Colon Cancer
11	Investigating The Effect Of Genistein On Liver Metastases Derived From Colon Cancer And Its Molecular Mechanisms
12	Implementation Of Practices That Build Brain Fitness And Memory
13	Knowledge Of Food That Is Low In Fat And High In Fiber And/Or The Importance Of Increasing Physical Activity Levels
14	Number Of Youth Planning To Adopt An Option For Responding To Bullying
15	Improved Emotional Health And Well-Being Through Actions Taken To Reduce Household Clutter And Accompanying Stress

Outcome #1

1. Outcome Measures

Number Of Research Projects Utilizing The Child Development Laboratory Research Database

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	21

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The purpose of this project is for the continuation of the Child Development Laboratory [CDL] Research Database Project at the University of Illinois at Urbana-Champaign. This project has been designed to facilitate an interdisciplinary, longitudinal, and programmatic research agenda at the Child Development Laboratory in the areas of child development and family studies.

What has been done

A total of 21 research projects were conducted at the CDL during the current reporting period. Seventeen of the 21 studies accessed information from the CDL Research Database project as part of their data collection. These 21 projects represent a diverse array of disciplines [such as Human Development and Family Studies, Advertising, Anthropology, Landscape Architecture, Art & Design, Nutritional Sciences, Communications, Community Health, and Music Education] and are focused on various aspects of children's growth and development [social/emotional development, cognitive functioning, physical growth and health].

Results

Nine of the projects were investigations conducted by graduate students working under the direction of a faculty advisor, while 12 of the projects were faculty-led investigations. In addition to these 21 research projects, 3,927 student observations and 1,763 student class projects were implemented during the current reporting period that accessed information contained in the CDL Research Database. In facilitating these research projects, student observations and student class projects, the CDL Research Database project played a key role in supporting the academic activities of six of the Colleges on the UIUC campus [Agricultural, Consumer & Environmental Sciences, Applied Health Sciences, Communication, Education, Fine and Applied Arts, and Liberal Arts and Sciences] as well as the School of Social Work.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services
806	Youth Development

Outcome #2

1. Outcome Measures

Increased Knowledge Of Children's Behavior At A Given Stage Of Development And Parenting Practices To Foster That Behavior

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Numbers Of Individuals Taking Recommended Actions To Manage Heart Disease And Diabetes Through Planning Menus/Choosing Foods Using The Food Guidance System

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	148

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Heart disease ranks as the number one cause of death, and diabetes ranks as the seventh leading cause of death in Illinois according to the Illinois Department of Public Health. In fact, more than 800,000 adults [8.4%] in the state have been diagnosed with diabetes according to the National Center for Disease Control.

What has been done

University of Illinois Extension's I on Diabetes program is a series of 2½-3 hour face-to face sessions designed for anyone interested in preventing or managing diabetes. During the series held in Illinois this year, 114 participants received information on diabetes treatment goals and self-monitoring, managing carbohydrates, sodium, cholesterol and fat portions, planning meals, and reading food labels. Food demonstrations, taste testing, and recipes assisted participants in using artificial sweeteners, low-fat products, and herbs and spices. Participants also completed a program evaluation to determine the impact of the program. Participants were asked to provide answers to four series of questions prior to and at the end of the I on Diabetes sessions. Meals for a Healthy Heart is a two-part face-to face series that focuses on increasing participant awareness of the major risk factors of coronary heart disease using methods that are similar to the diabetes programs. Evaluations are distributed at the end of the program, and one and three months after the program has ended.

Results

All but two of the participants who completed all or sections of the I on Diabetes pre- and post-evaluations indicated increasing their confidence, skills, or practices in managing their diabetes. Specifically: [1] Using a four-part scale ranging from 'strongly disagree' to 'strongly agree', 91 of 114 participants [80%] who completed the series of questions indicated that they improved their ability to manage diabetes in one or more areas. [2] Using another four-part scale ranging from 'not confident' to 'very confident', 101 of 114 participants [89%] indicated that they improved their confidence in managing their diabetes in one or more areas. [3] Using a four-part scale ranging from 'never' to 'almost always', 110 of 114 participants [97%] reported increasing their frequency in taking at least one recommended action to manage their diabetes. All but one of the 36 who completed all or sections of the Meals for a Healthy Heart one-month follow up evaluation indicated taking at least one, and as many as six actions including 31 [83%] who read more food labels to help plan their meals, 30 [83%] who used less sodium to season food [a recommended practice to reduce the risk of heart disease], and 26 [72%] who took action to make a weekly meal plan. Additional information regarding specific areas of changes in skills, confidence, and practices related to participants' management of diabetes are included in the Evaluation Results section.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle

Outcome #4

1. Outcome Measures

Delineating The Role Of Individual Nutrients, Especially Those Involved In A Multitude Of Biological Functions Such As Choline

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Good nutrition is essential for proper growth and development during the first year of an infant's life. Specifically, decades of nutrition research have shown that adequate provision of nutrients during the gestation and early postnatal periods is necessary to support proper brain development. Thus, delineating the role of individual nutrients, especially those involved in a multitude of biological functions [such as choline], remains important not merely to characterize biological significance, but to determine how best to provide these nutrients to infants when breastfeeding is undesirable or impossible.

What has been done

We continue to feed sows either an insufficient or sufficient concentration of dietary choline [based on established dietary requirements] from day 60 of gestation through farrowing [day 114], and newborn piglets obtained from these sows subsequently receive milk replacer containing either insufficient or sufficient choline in a complete factorial arrangement of pre- and post-natal treatments. This experimental design has permitted us to assess how early-life choline influences systemic [metabolic] and central [brain structure, composition, and function] outcomes related to cognitive development. Data has now been collected both on short-term [4 weeks of age] and long-term [12 weeks of age] time points in order to elucidate whether permanent effects of choline deficiency exist. Ongoing studies continue with this type of behavioral testing, and we also added magnetic resonance imaging [MRI] as an imaging modality to determine growth and development of the brain as a result of choline deficiency.

Results

We have optimized and validated behavioral procedures for testing learning and memory in the pig, and over the past year we have used a plus-maze setup that relies on extra-maze cues to assess hippocampal-mediated cognitive function. Whereas changes to the experimental procedure are needed for 12-week-old pigs, this behavioral assay has served as a consistently important outcome for our research, and these data are perfectly complemented by our recently-developed MRI procedures.

We have developed, optimized, and implemented a set of three MRI sequences that permit structural and neurochemical characterization of the piglet brain, and these techniques continue to deepen our knowledge about short- and long-term effects of early-life choline sufficiency. Over the past year, we have semi-automated post-processing data collection and interpretation to ultimately create a rapid and repeatable technique to assess aspects of cognitive development in the pig. This was achieved by establishing a brain template for the domestic pig, and this tool will

soon be made available to the public to benefit other research programs.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle
806	Youth Development

Outcome #5

1. Outcome Measures

Investigating The Ability Of Tomato Powder, Broccoli Powder And Soy Germ To Reduce The Progression Of Prostate Cancer

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Our studies will investigate the ability of tomato powder, broccoli powder and soy germ, alone and in selected combinations, to reduce the progression of prostate cancer in a mouse model of PCa. In addition, we will evaluate potential mechanisms by which bioactives in these foods may reduce prostate tumor growth or metastasis. We will especially focus on anti-androgenic effects of lycopene and other carotenoids from tomato powder utilizing genetically modified mice that lack one of the two carotenoid cleavage enzymes. These studies should provide significant experimental support for, or against, the use of soy, broccoli and/or tomato products, or specific combinations of these foods, for prevention of PCa progression and metastasis.

What has been done

A study was undertaken to determine the efficacy of dietary tomato and soy germ, alone and in combination, for the inhibition of prostate carcinogenesis in the transgenic adenocarcinoma of the mouse prostate [TRAMP] model. At 4 weeks of age, male C57BL/6 x FVB TRAMP mice [n=119] were randomized to consume: AIN-93G control, 10% whole tomato powder [TP], 2% soy germ powder [SG] or 10% tomato powder with 2% soy germ powder [TP+SG] for 14 weeks. 100% of

mice fed the control diet had PCa, while PCa incidence was significantly lower in mice consuming TP [61%, $p < 0.001$], SG [66%, $p < 0.001$] and TP+SG [45%, $p < 0.001$].

Results

Although the protection offered by the combination of TP and SG was not synergistic, it was the most effective intervention. TP, SG and TP+SG increased apoptotic index [AI] and modestly reduced the proliferative index [PI] in the prostate epithelium of TRAMP mice exhibiting the same histopathologic grade. The dramatic reduction in the PI/AI ratio by the dietary interventions suggests a greater stimulus for malignant progression in the prostate microenvironment of the control group. Maximally effective and safe strategies for PCa prevention may result from optimizing combinations of nutrients and bioactives through an orchestration of dietary patterns.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle

Outcome #6

1. Outcome Measures

An Evaluation Of The Effect Of Dietary Botanical Estrogens On Breast Cancer Growth And Progression

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Genistein [GEN] is the major isoflavone in soybeans well-known for its estrogenic properties through binding to estrogen receptors [ER], albeit with different affinities. Preclinical and in vitro studies indicate that GEN induces the transcriptional activation of several estrogen-responsive genes, preferentially through ER beta rather than ER alpha, at physiologically-relevant doses typical for adults consuming soy foods. Soy-containing foods and dietary supplements are the most significant dietary sources of isoflavones. The rise in popularity of products containing isoflavones has come from epidemiological studies in which soy foods, soy protein or isoflavones

were associated with health benefits related to menopause, cardiovascular disease and osteoporosis. These health claims have been only partially supported, and have been challenged by new evidence.

What has been done

In the present study, we utilized an experimental model of estrogen-dependent BC tumor growth. Feeding studies were conducted to determine the estrogenic effect of diets on MCF-7 tumor growth: [1] implantation [19 weeks] and withdrawal [6 weeks] of 17 β -estradiol [E2]; [2] dietary GEN 500 and 750 ppm during treatment/withdrawal for 23/10 and 15/9 weeks, respectively; and [3] dietary soy protein isolate [SPI] containing GEN 180 ppm for 31/9 weeks of treatment/withdrawal. MCF-7 tumors grew rapidly in the presence of E2 implantation and abruptly regressed completely after E2 withdrawal. At different rates, dietary GEN alone [500 and 750 ppm] and GEN [180 ppm]-containing SPI stimulated MCF-7 tumor growth. After removal of the stimulus diet, tumors induced by 750 ppm GEN, but not 500 ppm GEN or SPI, regressed completely. The protein expression of epidermal growth factor receptor 2 [HER2] was higher in the GEN- and SPI-induced non-regressing [GINR] tumors compared to MCF-7 and E2 controls.

Results

These results are the first reported to indicate that long-term dietary exposure to low doses of GEN [500 ppm] or GEN-containing SPI [180 ppm] stimulates MCF-7 tumor growth, and that after withdrawal of stimulus, these luminal A subtype tumor cells are reprogrammed towards a luminal B subtype, a more aggressive phenotype.

Results demonstrated that estradiol accelerated BC metastasis as indicated by bioluminescent imaging. In addition, estradiol enhanced metastatic tumor colony formation and increased the size of tumor nodules in the lungs, which were due in part to the increase in proliferative cells in the metastatic tumors. In vitro, estradiol increased the motility and invasion of 4T1 cells, and the stimulatory effect on cell motility was not blocked by ICI 182, 780, confirming that ER was not involved in the process. Results from the present study suggest that estradiol plays a role in ER-negative BC metastasis in the whole animal.

In summary, low doses of GEN during long-term dietary treatment elicit changes in MCF-7 cells after stimulus withdrawal leading to a more aggressive and advanced tumor growth phenotype. In SPI-fed mice, tumor growth did not stop, even after diet withdrawal. Observed changes were accompanied with the modulation of BC biomarkers such as HER2, suggesting a potential molecular pathway that could explain the tumor stimulatory effects of GEN and GEN-containing SPI after prolonged treatment/withdrawal.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle

Outcome #7

1. Outcome Measures

Extension Of A Successful, Evidence-Based Approach For Strengthening Prosocial Sibling Relationships

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Evidence is mounting that children who experience more positive relationships with a sibling are also more likely to enjoy better developmental outcomes. Conflicts among siblings are a prime source of dissatisfaction for most parents and children. Although a certain amount of conflict appears to be 'normal' for siblings, these disputes can be disruptive to family life due to both their frequency and qualitative characteristics. In addition to being the most common type of family strife, sibling conflicts may be quite aggressive and even violent. Intractable conflictual relations among young siblings have been shown to be predictive of later difficulties, such as antisocial and disturbed behaviors in adolescence. These factors have led some investigators to refer to sibling relationships as potential 'training-grounds' for violence and for establishing chronic coercive interactions with others. Longitudinal research has revealed that without intervention, the quality of sibling interactions tends to be relatively consistent over the course of childhood and adolescence, thereby leaving siblings with poor quality relationships at a disadvantage. Thus, a key challenge is to help siblings develop positive relationships so that they can more fully reap the advantages of sibling support.

What has been done

Attention was focused this past year on the development of an evidence-based parent training component for the Even More Fun With Sisters and Brothers curriculum, intended for families with siblings in the 8- to 12-year age range. Data collected through a previous Hatch-funded project on the Fun with Sisters and Brothers preventive intervention program [designed for siblings in the 4- to 8-year age range] served as the foundation for this work. These data included parents' reports of how they respond to their children's positive and negative interactions as well as their perceptions of the degree to which the effectiveness of their parenting behaviors were disrupted by their emotional reactions to sibling conflict.

Results

Results indicated that mothers' and fathers' reports of their emotional experiences during stressful interactions with their children were significantly correlated with the quality of their children's sibling relationship. Mothers' and fathers' abilities to more frequently engage in effective emotion regulation and coping strategies, such as cognitive reappraisal, were found to improve as a function of their family's participation in the preventive intervention. Furthermore, these improvements in parental emotion regulation were found to be associated with more positive sibling interaction at the end of the FWSB program. These results were used to develop a parent training module in which emotion regulation strategies, such as cognitive reappraisal, are taught as part of EM-FWSB.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
806	Youth Development

Outcome #8

1. Outcome Measures

Determining The Efficacy Of An Encapsulated Probiotics Delivery System In Selected Food Products Using Simulated GI Tract Models

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Probiotics have been marketed due to possible health benefits. However, many probiotics containing food products fail to maintain the recommended probiotics concentration [10^6 cfu/g] due to instability of probiotics in food matrices. The objective of this project is to encapsulate the target probiotic strains [*Lactobacillus acidophilus* and *Bifidobacterium infantis*] in protein-based wall materials. Microencapsulation using spray drying has been used as an effective method for protecting probiotics but the effect of atomization has not been thoroughly studied with evaluation on their effects on core materials such as probiotics.

What has been done

The effects of atomization methods on survivability of bacterial cells during microencapsulation process and storage were evaluated. Also, the effects of microencapsulation on viability of selected probiotics for storage and simulated gastrointestinal [GI] tract were evaluated. Bifidobacterium infantis ATCC 15697 and Lactobacillus acidophilus LA-5 were selected as probiotics for core materials. 10% [w/w] soy protein concentrate [SPC] or whey protein concentrate [WPC] solutions were prepared as the protein wall matrix. Probiotics dispersed in soybean oil were mixed with 10% SPC or WPC solution by a 1:9 ratio. Then the mixture was homogenized at 10,342 kPa with single path by a two-stage APV homogenizer. A centrifugal or a two-fluid nozzle atomization was used for atomization of the emulsion for the spray drying process. Viability of encapsulated probiotics was evaluated during the microencapsulation process, storage and simulated GI tract. Data were analyzed by ANOVA and Fisher's least significant difference.

Results

Results showed that microencapsulation was significantly effective on viability of Bifidobacterium infantis ATCC 15697 compared to non-encapsulated during encapsulation process and storage. The viability of Bifidobacterium infantis ATCC 15697 encapsulated in soy protein was maintained during long-term storage [nine weeks] with as little as a three log reduction. In terms of atomization method, two-fluid nozzle atomization protected the Bifidobacterium infantis ATCC 15697 significantly better than centrifugal atomization during simulated GI tests. Effects of the wall matrices were not significant during encapsulation process and storage but whey protein showed significantly better protection of Bifidobacterium infantis ATCC 15697 during the GI test. Encapsulated Bifidobacterium infantis ATCC 15697 maintained viable counts significantly longer than non-encapsulated Bifidobacterium infantis ATCC 15697 during storage and simulated GI tract. Lactobacillus acidophilus LA-5 resulted in similar pattern in microencapsulation and GI tests as Bifidobacterium infantis ATCC 15697.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle

Outcome #9

1. Outcome Measures

An Examination Of How Family Conditions And Social Institutions Impact Early Developmental Processes

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The two primary objectives of this work are to determine how socioeconomic factors including employment, income, and marital status impact early cognitive, behavioral and socio-emotional development [paying particular attention to the mediating role of maternal mental health and parenting behavior] and to examine how work schedules including non-standard work hours influence early development, particularly within the context of single-mother families.

What has been done

To meet these objectives, we conducted a statistical analysis and completed one study which examined the relationship between non-standard work schedules and children's well-being in single-mother families. In this study we also examined possible pathways [including parental stress and depression] through which work schedules may influence children's development. We utilized data from a national sample of children who were surveyed every two years from birth through kindergarten [Early Childhood Longitudinal Study Birth cohort]. This data was sponsored by the U.S. Department of Education and included survey instruments for children's behavioral and cognitive development, detailed survey data on mother's employment and job characteristics, as well as information on maternal stress and mental health.

Results

The results of our study suggest that non-standard work hours do play a role in young children's cognitive, social, and behavioral development within the context of single-mother households. Non-standard work is negatively associated with early literacy and math ability and increased internalizing of behavior problems among preschool children of single working mothers, even after controlling for income, child, and maternal characteristics such as maternal education. However, we find little evidence that the relationship between employment and early literacy is mediated by maternal depression which suggests that the mother's mental health may be only one of many factors to consider when trying to understand how non-standard work matters for single mothers. The results of our study suggest the need for future research to examine other ways non-standard work may affect child development.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
805	Community Institutions, Health, and Social Services
806	Youth Development

Outcome #10

1. Outcome Measures

Development Of Dietary Strategies To Significantly Reduce Both The Incidence And Mortality Of Colon Cancer

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Based on current knowledge of colon cancer development and beneficial actions of soy products, the present study is designed to test the hypothesis that dietary genistein modulates colon cancer development through epigenetic modifications on WNT signaling-related genes. Using a rat model for colon cancer development, we will be able to examine how genistein modifies the epigenetic codes so that the WNT signaling is maintained at a normal level when induced by a carcinogen and therefore chance of colon cancer development is greatly reduced. Moreover, we will compare the effects of dietary genistein at different stages of life to identify the best timing of exposure for achieving the maximal protection against colon cancer development. Findings from this project will improve our understanding of the mechanisms of soy products at their ability to reduce colon cancer risk and facilitate the identification of molecular markers, especially epigenetic markers, associated with colon cancer development. The proposed study will lead to the future development of dietary strategies to significantly reduce both incidence and mortality of colon cancer.

What has been done

A colon cancer model was established by splenic injection of a human cancer cell line, SW620, in athymic nude mice. Extract of Ginkgo Biboba [EGb] was subcutaneously injected into mice every week for six weeks after 8-week establishment of tumor in the mice. Tumor progression in liver was analyzed and the potential mechanism of action of EGb was investigated.

Results

Results showed a significantly increased rate of metastasis of colon cancer cells to the liver by EGb treatment than the control PBS group. EGb induced the proliferations of tumor cells in the metastasized liver significantly. The angiogenesis markers, CD31 and VEGF were not altered by EGb treatment in the metastasized mice liver, which suggests that the increased metastasis is primarily due to cell proliferation. EGb activated the MAPK/JNK cascades in the metastasized

liver, which is a stress-activated pathway.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle

Outcome #11

1. Outcome Measures

Investigating The Effect Of Genistein On Liver Metastases Derived From Colon Cancer And Its Molecular Mechanisms

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

This study is aimed at investigating the effect of genistein [Gen] on liver metastases derived from colon cancer and its molecular mechanisms.

What has been done

Male athymic nude mice were randomized to three dietary groups, which were western diet [W: calories 11%, fat 39%, carb 50%], and W diet supplemented with either 100ppm Gen [GL] or 500ppm Gen [GH]. Animals were fed with different diets for 16 weeks before they were intra-splenically injected with metastatic human colon cancer cells SW620 and sacrificed 8 weeks later. The GL and GH groups have much lower liver metastasis rates [MR], which were 36% and 17%, respectively, compared to the W group with MR of 55%. Mean metastases size of the W group [4.7 mm²] is larger than the GL [2.1 mm²] and GH [2.0 mm²] groups.

Results

To understand the molecular mechanism of the anti-metastatic function of Gen, the expression of multiple metastasis-related genes were determined by real-time PCR. Importantly, mRNA of NDRG1 gene was greatly decreased by 50% and 60% in the GL [$p=0.005$] and GH groups [$p=0$].

001] compared to the W group. As NDRG1 has been reported as a biomarker for metastasis and poor prognosis in hepatocellular carcinoma, the down-regulation of NDRG1 by Gen supplementation was corresponding to decreased liver metastasis. In summary, our study indicated that dietary supplementation of Gen suppressed colon cancer metastasis, which is associated with altered expression of metastasis-related genes by the treatment.

4. Associated Knowledge Areas

KA Code	Knowledge Area
704	Nutrition and Hunger in the Population
724	Healthy Lifestyle

Outcome #12

1. Outcome Measures

Implementation Of Practices That Build Brain Fitness And Memory

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	35

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

According to the Illinois Department of Public Health, more than 222,300 people 65 and older in Illinois have Alzheimer's disease. Memory loss and the fear of developing dementia is a concern for all, especially as people age. With growth in this country's aging population, concerns about maintaining one's memory, as well as recognizing and managing brain disease, are issues of great interest to the aging and their families in maintaining quality of life.

What has been done

Drawing on research being done at the University of Illinois and other research institutions, a program series on brain health was conducted by Family Life Extension Educators in fifteen locations in Illinois this past year. The first session of the series addressed strategies and techniques for building a better memory. In the second session [Fit Wits] participants learned about how brain health is directly related to body health and how to maintain that health. In the third session [Head Strong: Exercise Strategies to Enhance Memory and Thinking], participants explored and practiced several exercise strategies to challenge the brain. The fourth session was

offered in partnership with the Greater Illinois Chapter of the Alzheimer's Association and focused on memory loss, dementia, and Alzheimer's disease and diagnosis. In addition, sessions were delivered as a stand-alone program to 44 groups throughout the state. At the end of each session, participants provided written feedback on changes in knowledge, plans for using the knowledge they gained, and activities they tried at home.

Results

The following results were collected from participants in three of the series that were taught. Distribution and analysis of evaluations after the first three sessions of Brain Health revealed that all of the 46 participants learned something.

After the first session, 42 [91%] of the 46 participants mentioned learning facts about memory loss such as: [1] how memory is formed; [2] types of long-term memory; [3] how emotional, physical, and environmental factors affect memory; [4] by challenging the brain, memory will improve; and [5] not to worry about normal memory forgetfulness such as remembering names. After the second session, 29 [63%] participants shared comments that included learning about how the body and brain work including: [1] blood flow/oxygen's importance to the brain; [2] causes of cognitive decline; [3] the need to keep the brain active by learning new things that challenge the brain; and [4] that encouraging brain cell development can forestall the effects of dementia. They also mentioned learning one or more ways to stimulate the brain.

In addition, after the third session three-fourths [35] of the participants listed activities they had tried at home following the first two sessions. Activities most frequently mentioned included Sudoku, playing games, completing puzzles, association techniques, and using the left hand to complete tasks. This feedback suggests that the series successfully addressed ways to alleviate concerns about aging and stimulated participants to take action to keep the brain healthy to ensure their quality of life.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
802	Human Development and Family Well-Being

Outcome #13

1. Outcome Measures

Knowledge Of Food That Is Low In Fat And High In Fiber And/Or The Importance Of Increasing Physical Activity Levels

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	703

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Obesity among children in the United States has become a national public health concern. According to the 2003-2004 Healthy Smiles, Healthy Growth data from the Illinois Department of Public Health [39%] of Illinois' third grade students are at risk of being overweight [18%] or are overweight/obese [21%]. Lack of proper nutrition and inadequate physical exercise are two of many interactive factors that lead to childhood obesity.

What has been done

University of Illinois Extension 4-H conducted the Health Jam program with more than 700 youth from seven counties participating in two-day camps and an eight-week 'Walk Across Illinois' that followed the camps. During the camps, young people learned how to keep their bodies healthy and fit and explored health professions. Educational activities focused on healthy eating behaviors, physical activity, disease prevention, dealing with health emergencies, and body functions and their measures. The Walk Across Illinois follow-up used a team format to collect steps tracked by each student.

Results

A pre- and post-test evaluation format consisting of 21-25 questions tailored to the healthy activity topics taught at each delivery site was used to identify knowledge increases. All but nine of the 712 youth participants who completed the pre- and post-tests were able to correctly answer at least one question on the post-test that was incorrectly answered on the pre-test. For example, more than one-third of the youth [83 of 243] at three Health Jam sites were able to recognize nutrient dense foods after participating in the program. At another site 31 of 68 youth [54%] learned that walking a mile and running a mile burns the same amount of calories after participating in Health Jam. A paired-samples t-test analysis indicated a statistically significant increase in the correct answers to these and other questions on the post-test as compared to the pre-test.

For the walk, youth supported each other to complete 30 minutes of daily physical activity and to track the number of miles they walked. By working together, 100 percent of the youth achieved that goal and walked the equivalent of the length of Illinois.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle
805	Community Institutions, Health, and Social Services
806	Youth Development

Outcome #14

1. Outcome Measures

Number Of Youth Planning To Adopt An Option For Responding To Bullying

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	104

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Violence and bullying in schools is increasing among teens in the U.S. There is a scarcity of materials focusing on bystanders that is targeted for junior high and high school students.

What has been done

A team of current and now-retired educators developed a research-based prevention simulation and guided discussion program for junior high and senior high youth, supported by statistical research on bullying among teens in the U.S. Breaking the Code [BTC] program objectives are for youth to: [1] See the effects of bullying and understand the power of their decisions as bystanders in a bullying situation; [2] Identify options for responding to bullying; [3] Be motivated to take a stand against bullying. BTC is a simulation that tells the story of youth observing everyday situations where bullying occurs. Eight 30-minute scenarios are played out in either narrator or skit form. Bystanders begin to realize the choices they make have a big impact on the victim, the normalcy and acceptance of bullying, and the social climate of their school. Guided discussion assists students in processing the experience.

Results

Data from a subset of 318 students who completed both pre- and post-program evaluations in 2013 have continued to show increases in the number of students who definitely would: [1] Help a victim: 104 [33%] additional students checked this on the post-test [119 pre-test vs. 223 post-test]; [2] Confront a bully: 88 [28%] additional students checked this on the post-test [97 pre-test vs. 185 post-test]; [3] Understand a group can make a difference: 89 [27%] additional students checked this on the post-test [147 pre-test vs. 234 on the post-test]; [4] Ask an adult for help: 86 [26%] additional students checked this on the post-test [89 pre-test versus 175 post-test].

Sample responses when asked what they will do differently follow: 'I won't talk about people', 'I won't laugh at people', 'Not be mean to new students', 'Never spread rumors', and 'Do not call

names'.

4. Associated Knowledge Areas

KA Code	Knowledge Area
802	Human Development and Family Well-Being
803	Sociological and Technological Change Affecting Individuals, Families, and Communities
806	Youth Development

Outcome #15

1. Outcome Measures

Improved Emotional Health And Well-Being Through Actions Taken To Reduce Household Clutter And Accompanying Stress

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	183

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Excess stress and conflict can be a detriment to achieving a healthy lifestyle. One of the stresses may be living in a cluttered environment. Taking action to organize one's life is one way to help to reduce that stressor.

What has been done

University of Illinois Family Life Extension Educators developed and delivered a workshop for a statewide retiree group entitled Simplify Your Life: Clear the Clutter & Your Stress. The workshop was conducted in 16 locations throughout Illinois in the summer of 2013 and attended by 562 retirees, family and friends. The objectives of the workshop included helping participants to: [1] Understand how clutter can cause stress; [2] Identify their own reasons for the build-up of clutter; [3] Learn the barriers and benefits of dealing with clutter; and [4] Learn techniques to clean-up their clutter. As part of the program participants developed an action plan to get organized. Follow-up evaluations were developed to identify what steps were taken to complete participants' action plans. Evaluations were mailed to 383 participants who had provided addresses and completed and returned by 192 attendees. An additional 157 individuals were reached through

workshops offered to community groups, child care providers and senior expo attendees.

Results

Follow-up evaluations for Simplify Your Life: Clear the Clutter & Your Stress completed by 192 workshop participants [50% return rate] indicated that 134 had started or finished their plan to de-clutter. Nearly all [174 or 92%] had gained ideas they could try and 183 [95%] had used at least one of four de-cluttering strategies recommended during the workshop. Nearly four-fifths [147 or 78%] were motivated to do something about their clutter, and [162 or 88%] indicated they now think differently about de-cluttering after attending the workshop. With respect to experiencing a sense of relief/reduction of stress due to progress made from de-cluttering, nearly all 104 who answered the question indicated 'yes' [48%] or 'somewhat' [44%]. These and other responses to the evaluation completed by the Simplify Your Life: Clear the Clutter & Your Stress participants evidenced the impact this particular family life program had on improving residents' emotional health and well-being.

4. Associated Knowledge Areas

KA Code	Knowledge Area
724	Healthy Lifestyle
803	Sociological and Technological Change Affecting Individuals, Families, and Communities

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Economy
- Appropriations changes
- Competing Programmatic Challenges
- Populations changes (immigration, new cultural groupings, etc.)

Brief Explanation

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Chronic Disease Evaluation Results

In 2013, pre- and post-evaluations consisting of four sections of questions were collected from 114 participants at the beginning and again at the end of **I on Diabetes** programs conducted in ten counties in Illinois. **I on Diabetes** is a series of 2 ½ to 3 hour face-to face sessions designed for anyone interested in preventing or managing diabetes. Content of the program series addresses diabetes treatment goals and self-monitoring, managing carbohydrates, sodium, cholesterol and fat portions, planning meals, and reading food labels. Food demonstrations, taste testing, and recipes assisted participants in using artificial sweeteners, low-fat products, and herbs and spices. All but two of the 114 participants who completed all or some of the sections of the evaluation

indicated increasing their confidence, skills, or practices in managing their diabetes.

Improved Ability to Manage Diabetes

Ninety-one [91] of 114 participants [80%] who completed the series of questions indicated that they improved their ability to manage diabetes in one or more areas. Using a four-part scale ranging from 'strongly disagree' to 'strongly agree' we found that: [1] 65 of 114 participants [57%] who completed the evaluations indicated they improved their ability to select healthier choices when dining out; [2] 60 [63%] reported they could now more easily prepare healthy foods; [3] 55 [48%] indicated they could easily select foods that fit their meal plan; [4] 49 of 114 [43%] increased agreement that healthy foods taste good; and [5] Only 32 of 114 [28%] of the participants indicated feeling they had improved their ability to easily talk to the doctor about their diabetes.

Improved Confidence in Diabetes Self-Management

A second series of questions on the evaluation was designed to identify increases in the confidence of the participants to manage their diabetes using another four-part scale ranging from 'not confident' to 'very confident'. One hundred and one [101] of 114 participants [89%] indicated that they improved their confidence in managing their diabetes. More than half of the 114 who answered these questions indicated an increased confidence in the following: [1] Estimating the amount of food you should eat [78 or 68%]; [2] Following a healthy diabetes meal plan [70 or 61%]; [3] Knowing which foods have carbohydrates [68 or 60%]; [4] Preparing foods that fit into their meal plan [64 or 52%]; [5] Selecting foods that will reduce the risk for heart disease [67 or 59%]; and [6] Only 42 [37%] increased confidence in talking with their doctor about their health.

Increased Frequency of Recommended Actions to Manage Diabetes

A final series of questions explored increased frequency in using recommended practices by the participants. Using a four-part scale ranging from 'never' to 'almost always', 110 of 114 participants [97%] reported increasing their frequency in taking at least one recommended action. More than half of the participants revealed increasing the following practices: [1] Setting goals to help manage their diabetes [73 or 64%]; [2] Using food labels to plan their meals [69 or 61%]; [3] Keeping track of the amount of foods with carbohydrates they eat each day [66 or 58%]; and [4] Following a meal plan to help manage diabetes [61 or 53%].

From one-fourth to one-half indicated increasing their frequency in taking the following actions: [1] Reading food labels [47 or 41%]; [2] Eating at least three regularly spaced meals a day [42 or 37%]; [3] Trying to limit fat intake [39 or 34%]; [4] Trying to be physically active [31 or 27%]; and [5] Trying to limit fat intake [28 or 25%].

In 2013, one-month and a three-month evaluations were sent to 40 participants in the University of Illinois Extension **Meals for a Healthy Heart** program. The program is a two-part face-to-face series that focuses on increasing participant awareness of the major risk factors of coronary heart disease. During the series participants received information on heart healthy foods, menu planning, healthy eating away from home, physical activity and weight management. All but one of the 36 participants who responded to an evaluation that was distributed one month after the program's completion indicated taking at least one, and as many as six, of the following actions: [1] Read more food labels to help

plan their meals [31 or 86%]; [2] Used less sodium to season food [30 or 83%]; [3] Made a weekly meal plan [26 or 72%]; [4] Increased physical activity [23 or 64%]; [5] Checked their cholesterol [19 or 53%]; and [6] Checked blood pressure more often [16 or 44%].

After receiving a follow-up evaluation mailed three months after the program ended, nineteen participants responded. Fifteen of the 19 participants made at least one and as many as six changes in the following eating habits since participating in the program: [1] Read more labels [14 of 19 reported doing so]; [2] Increased fiber intake [8 of 19 did with four others planning to do so]; [3] Decreased salt/sodium intake [8 of 19 did]; [4] Decreased intake of high fat foods [5 of 19 did with a sixth person planning to do so]; [5] Changed to monounsaturated fats in food preparation [5 of 19 did]; and [6] Ate a variety of foods based on MyPlate food guidance system [5 of 19 did with two more planning to do so]. It is worth noting that eleven of the nineteen respondents indicated that they had decreased their intake of high fat foods and use of mono-unsaturated fats before attending the program.

Three additional questions sought to elicit respondents' opinions about the following changes resulting from their participation in the program: [1] For 'more confident in planning and preparing heart healthy meals' thirteen checked 'yes' and two checked 'no' with four checking 'uncertain'. [2] For 'making more heart healthy food choices when eating away from home' sixteen checked 'yes' and two checked 'no' with one other who plans to do so. [3] For 'more aware of the relationship between diet and chronic diseases such as heart disease, diabetes and stroke' fifteen checked 'yes' and one checked 'no' with one other checking 'uncertain'.

Simplify Your Life: Clear the Clutter & Your Stress Evaluation Results

Evaluations were mailed to 383 participants in **Simplify Your Life: Clear the Clutter & Your Stress** and completed and returned by 192.

With respect to completing an action plan to reduce their clutter that respondents had created as part of this workshop, nearly three fourths [140] indicated that they had started or finished their plan. Of the remaining one-fourth, 26 had established a plan but had not started it yet, and 21 had not made an action plan yet.

Respondents were asked to indicate their use of four strategies suggested during the training. The strategies included taking 5-15 minutes sporadically during the day to pick up and put away [Spurt Strategy], complete some tasks immediately rather than putting them off to avoid clutter build-up [Prompt Put Away], placing items in a donation/give away container or bag that is kept handy [Castaway Container], and doing de-clutter maintenance in many areas in the home on a regular basis [Good Riddance Routine]. Nearly all [183 of 192] indicated using one or more of the four strategies.

Respondents were also asked to select one or more of four answers regarding what they gained from the workshop. Nearly all [174 or 92%] checked 'ideas I can try'. Eighty-two [43.4%] discovered resource materials they could use, and one-third [65] received answers to their questions. Only five reported that they had not learned anything new.

In response to a second question, 147 [78.6%] reported being motivated to do something about their clutter, 111 [59.6%] were stimulated to think, and 56 [29.9%] were inspired to learn more about de-cluttering.

In response to a third question, 162 [88%] indicated they were now thinking differently about de-cluttering after attending the workshop and 95 provided comments. The comments addressed facts such as the effects of clutter or techniques for dealing with clutter. Their other comments identified actions taken, being motivated, and improvements in their attitudes. A number of respondents' comments reflected what might be termed statements of self-talk such as 'the clutter is my clutter and I should take care of it'.

Respondents were also asked if they experienced a sense of relief/reduction of stress due to progress made toward de-cluttering. Eighty-nine [48.4%] checked 'Yes', 80 [43.5%] checked 'Somewhat', and 15 [8.2%] checked 'No'.

Key Items of Evaluation

Chronic Disease Key Items of Evaluation

All but two [98%] of the 114 participants who completed all or some of the sections of the **I on Diabetes** evaluation indicated increasing their confidence, skills, or practices in managing their diabetes, especially with respect to selecting healthy food choices and following a healthier meal plan to manage their diabetes. Results included: [1] Using a four-part scale ranging from 'strongly disagree' to 'strongly agree', 91 or 114 participants [80%] who completed the series of questions indicated that they improved their ability to manage diabetes in one or more areas; [2] Using another four-part scale ranging from 'not confident' to 'very confident', 101 of 114 participants [89%] indicated that they improved their confidence in managing their diabetes in one or more areas; and [3] Using a four-part scale ranging from 'never' to 'almost always', 110 of 114 participants [97%] reported increasing their frequency in taking at least one recommended action to manage their diabetes.

The results of evaluations comparing responses to the same questions at the beginning and at the end of participation in **I on Diabetes** strongly suggest that the program was impacting participants' management of diabetes.

Responses from the participants in **Meals for a Healthy Heart** indicated that all but one participant took at least one, and as many as six, recommended actions to reduce the risk of heart disease. Thirty-one [86%] took action to read more labels to help plan meals. Thirty [83%] took action to reduce their use of sodium [a recommended action to reduce the risk of heart disease], and 26 [72%] took action to make a weekly meal plan.

Approximately one-third to four-fifths of the 19 three month evaluation respondents are maintaining changes such as reading food labels or selecting healthy foods in order to reduce the risk of developing heart disease. In addition, more than three-fifths who responded to the questions feel more confident in planning and preparing heart healthy meals, making heart healthy choices when eating away from home, and increasing their awareness of the relationship between diet and heart disease.

Simplify Your Life Key Items of Evaluation

Follow-up evaluations for **Simplify Your Life: Clear the Clutter & Your Stress** completed by 192 workshop participants [50% return rate] indicated that three-fourths had started or finished their plan to de-clutter. Nearly all [92%] had gained ideas they could try and 183 [95%] had used at least one of four de-cluttering strategies recommended during the workshop. Nearly four-fifths [78%] were motivated to do something about their clutter, and 88% indicated they now think differently about de-cluttering after attending the workshop. With respect to experiencing a sense of relief/reduction of stress due to progress made from de-cluttering, nearly all indicated 'yes' [48%] or 'somewhat' [44%]. These and other responses to the evaluation completed by the **Simplify Your Life: Clear the Clutter & Your Stress** participants evidenced the impact this particular family life program had on improving residents' emotional health and well-being.