

USDA Says Yes to Supporting FCS: The Role of the United States Department of Agriculture in FCS Research, Education, and Extension

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Promoting healthy family and community life remains a critical part of the mission of the United States Department of Agriculture (USDA). With emergence of domestic science in rural home life in the 19th century through the inception of the legislative support of Cooperative Extension Service's home economics to today's Family & Consumer Sciences (FCS) education programs, USDA has played a significant role in the promotion and relevance of FCS and the human sciences. This paper highlights USDA's engagement and investments in FCS in the context of education, research, and extension.

Introduction

The Morrill Act of 1862 set the stage for provisions of federal resources for states to create or designate institutions of higher education for rural citizens offering agriculture, mechanical arts, and eventually domestic science as the cornerstones of instruction (National Research Council, 1995). Over time, the land-grant focus evolved to include research and extension outreach completing the tripartite mission. The historical connection uniting agriculture and family and consumer sciences (FCS) is evident today across many land-grant universities, which offer FCS or human sciences programs at the graduate and undergraduate levels. As we engage in strategic initiatives in our respective professional spaces to promote FCS and to also recruit more individuals to *Say Yes to FCS* as a career, it is important to acknowledge and celebrate USDA's role as a partner in advancing the field.

USDA-NIFA and FCS

The National Institute of Food and Agriculture (NIFA) is USDA's extramural funding agency and the federal partner to the land-grant university system. Through federal funding and leadership, NIFA focuses on investing in food, agriculture, natural resources, and human sciences (FANH) to solve critical issues impacting everyday life and the nation's future. NIFA's mission is to "invest in and advance agricultural research, education, and extension to solve societal challenges" (NIFA, 2014). Understanding, educating and supporting consumers and families is a critical element of solving these grand societal challenges NIFA is addressing related to food, health, and sustainability.

It is important to note that food and agricultural sciences is legislatively defined as the basic, applied, and developmental research, extension, and teaching activities in food and fiber, agricultural, renewable natural resources, forestry, and physical and social sciences, including activities in several areas relevant to the field, such as: nutritional sciences and promotion; farm enhancement, including financial management, input efficiency, and profitability; home

economics; rural human ecology; and youth development and agricultural education, including 4-H clubs (National Agricultural Research, Extension, and Teaching Policy Act of 1977, 2002). As such, there is a clear connection and place for FCS in food and agriculture education, research, and extension from both a legislative and systems perspective. FCS is one of ten science portfolios at NIFA. Within this portfolio, which is overseen by the Division of FCS (DFCS), program leaders engage in national leadership roles and funding administration to support the human and social dimensions of food and agricultural sciences. This work covers a number of topical areas under the broad themes of family well-being and community vitality.

Because a well-trained and thriving agricultural workforce is vital to addressing human and environmental challenges at the global level, another significant part of NIFA's mission is to "ensure the development of human capital, communities, and a diverse workforce through research, education, extension and engagement programs in food and agricultural sciences to support a sustainable agriculture system" (NIFA, 2014). NIFA develops and administers grant programs and other initiatives that help to build the capacity of minority-serving institutions, enhance teaching and learning, and create workforce development opportunities to inspire a new generation of scientists and educators in food and agriculture.

NIFA's commitment to creating educational opportunities in food, agriculture, natural resources, and human sciences places the agency in an ideal position with educational entities with FCS programs and with relevant stakeholders focused on advancing the field. Through these opportunities, NIFA can promote and support FCS programs and share relevant opportunities for recruitment, retention, and growth. A considerable amount of synergy exists between NIFA goals and strategic efforts to increase the number of professionals prepared to enter into FCS educator and researcher roles. In the classroom, in the field, and in the lab, FCS professionals are addressing NIFA goals related to healthy behavior formation, financial literacy, food safety, sustainable consumption, and optimal well-being. In fact, NIFA has made investments in FCS education and research at numerous universities through its capacity and competitive funding programs. The DFCS team at NIFA also capitalizes on opportunities to engage in national discussions and efforts to tell our story and promote our field.

Enhancing Workforce Development

Student Opportunities

Experiential learning opportunities in FCS have far-reaching benefits, including creating opportunities for students to serve their community and become ambassadors for the profession (Grotta & McGrath, 2013). Such opportunities provide an environment to cultivate 21st century employability skills that can be utilized across professional settings and to master content knowledge critical to successfully carrying out our work. Through experiences working with both extension and research faculty, students will be in a position to understand the transformative nature of the research, education, and outreach while enriching their training.

Applied learning opportunities. Students engaged in basic and applied research in the field of FCS can observe the research process and gain insight into how this knowledge informs program development, implementation, and evaluation. As an example, NIFA administers the Agriculture and Food Research Initiative Food, Agriculture, Natural Resources, and Human Sciences Education Literacy Initiative (ELI) to support research and extension experiences for undergraduates as well as pre-doctoral and postdoctoral fellowships, so they may enter the food, agriculture, natural resources, or human sciences workforce as full professionals with outstanding skills. Recently, AFRI ELI funded a post-doctoral fellow's project to build a

childhood obesity prevention system for early child care settings in Hawaii through biometric screenings, system wide continuing education for Head Start teachers and staff, and parental engagement. This project reflects NIFA's commitment to reducing childhood obesity and improving food safety, nutrition, and human health. The work also reflects the core of FCS through using evidence-based research to solve complex and diverse challenges and through empowering families to improve their health.

Service learning opportunities. Public and community service learning opportunities are beneficial to student development as well (Celio, Durlak, & Dymnicki, 2011). Students can benefit from exposure to government administration at all levels and to the public policy process. Professionals should embrace the human capital that exists across colleges and universities, and create more pathways for volunteerism and service to the community and the profession. To illustrate, NIFA developed a Volunteer-For-Credit Intern Program for students in the Washington, DC metro area to foster an interest in food, agriculture, natural resources, and human sciences. Student volunteers work on a specific project with NIFA staff while also being exposed the federal work culture and career pathways. In return, students are given academic credit at their institutions.

Encouraging student retention. Implementing these high-impact educational practices has been shown to increase student retention and engagement in the campus community, particularly among underserved student populations (O'Donnell, Botelho, Brown, González, & Head, 2015; Kuh, 2008). Utilizing funds awarded through the 1890 Capacity Building Program, the University of Maryland-Eastern Shore (UMES) School of Human Ecology implemented a project combining two high-impact practices: undergraduate research and service learning in the human sciences. The UMES team endeavored to create an environment where undergraduates will become passionate inquirers, critical thinkers, and contributors to the body of knowledge in the human sciences. The impact of the grant is embodied in the opportunity to engage undergraduate students in the principles of research and service learning, providing them with knowledge, skills, resources, and mentorship to develop as effective scholars, communicators, and leaders. Participating students committed to service in the campus child and family development center. Areas of research included bullying and childhood obesity prevention. Two students in the program had their research published in the online *Undergraduate Research Journal for the Human Sciences*. Students also presented their research in several forums, including the Historically Black College and University Research Symposium and ScholarCon. This project also resulted in increased engagement between students and faculty members.

Recruiting Hispanic Students. NIFA's Hispanic Serving Institutions (HSI) Grant Program has supported several projects focused on increasing the enrollment and graduation of Hispanic students in programs leading to careers in FCS. Several of these projects addressed diversity in various occupations and increased future professionals' capacity to understand and serve Hispanic audiences, especially in the area of health disparities. The Centers for Disease Control reported the prevalence of obesity among children and adolescents was highest among Hispanics with 22.4 percent compared to non-Hispanic blacks with 20.2 percent and non-Hispanic whites with 14.1 percent (Centers for Disease Control, 2012).

Funded through the HSI grant program, California State University, Fullerton is creating a critical mass of students with competencies to address childhood obesity in the Hispanic community through a culturally responsive approach taking into consideration the social determinants of health and public policy. The main activities of their project were: 1) the development and implementation of two upper level undergraduate courses, *Obesity, Policy and*

the Hispanic Community, as well as an internship and experiential learning course where students gained 120 required hours of experience in obesity prevention and nutrition in the Hispanic community; 2) the creation of a model for workforce readiness and leadership development; and 3) building community partnerships to create opportunities for student learning.

The *Comidas y Comunidades Saludables* (Food and Healthy Communities) successfully enrolled 57 participants, predominantly Hispanic students, in the program. Students participated in community service programs with St. Jude's Medical Center and the Latino Health Access Child Healthy Weight Program, a local non-profit organization addressing public health problems among low-resource audiences. The students also attended national meetings on nutrition and childhood obesity, increasing their exposure to careers in nutrition research and expanding their network with professionals in the field. Evaluations of the program revealed statistically significant increases in interest to pursue a nutrition-related career, and perceived knowledge of public policy, the built environment and obesity research, and childhood obesity issues.

Professional Development

Cooperative Extension is the world's largest informal educational system. Through extension, land-grant colleges and universities bring relevant, research-based, unbiased resources and programs to agricultural producers, entrepreneurs, consumers, families, and communities. As the federal partner to extension, NIFA plays an essential role in the mission by administering annual congressionally appropriated capacity fund grants to supplement state and county funds. NIFA has also provided support for extension through other grant programs. One program that has had a positive impact on FCS extension is focused on volunteer development.

Throughout its history, volunteerism has always been valuable to the development and delivery of programs in extension (Ramussen, 1989). Community members who have the interest and expertise work with extension as master volunteers in diverse program areas including gardening, 4-H and youth development, natural resources, parenting, clothing, nutrition, and food preservation. These volunteers also serve in critical leadership roles on advisory committees and boards. Given the tremendous assets volunteers are in supporting the extension educational system, it is essential they possess skills, knowledge, and leadership competencies to be effective in their roles. Equipped with knowledge and proper training, they are significant assets to extension programs and their communities (Franz, 2009).

National program leaders at USDA-NIFA also identified a need for volunteers with FCS programs to increase their awareness of all extension FCS core program areas, the FCS story, and brand. To address this need, NIFA partnered with Montana State University to develop the Master FCS Volunteer Program (2013), a dynamic national volunteer training curriculum. The program is designed for Cooperative Extension staff, State Extension Specialists, and local FCS professionals to teach a series of classes to train volunteers in the curriculum. Individuals can also complete a self-paced curriculum online. There are three modules consisting of 12 lessons in the Master FCS Volunteer Program, which were developed with input and feedback from FCS extension professionals. The modules cover 1) the history, purpose, and impact of the land-grant university system and extension with a focus on FCS, 2) leadership and communicating with the public, and 3) marketing and branding.

The Master FCS Volunteer Program has been implemented with volunteers in over a quarter of states across the country, often through innovative approaches. Oklahoma State

University Extension has included the program as an online training offering for their FCS educators. The program has also been integrated into FCS introductory courses in academic programs. In partnership with USDA, the National Extension Association for FCS (NEAFCS) now annually recognizes exceptional implementation of the Master FCS Volunteer Program at the association's conference awards presentation. Montana State University is maintaining the Volunteer Management Database System that tracks program implementation activities. The program contributes to the goal of ensuring the relevancy and effectiveness of FCS volunteers extension programs while also promoting FCS education as a promising and impactful career field.

Preparing the Next Generation

Supporting agriculture through education is a centerpiece of NIFA's mission. NIFA offers many funding opportunities for advancing the FCS profession with respect to student development, professional development, and program development and improvement. This support has had a substantial impact on our field because it has allowed grantees the opportunities to: 1) provide students with experiential learning opportunities to build their proficiency in their discipline and practice 21st century skills for the workplace; 2) increase student recruitment and retention leading to a more culturally diverse and dynamic family and consumer sciences workforce; 3) create or develop high-quality educational curricula for programs; and 4) strengthen education and research capacity to discover innovations and generate exceptional ideas for solving societal challenges.

Program Development

With support from the 1890 Capacity Building Grant Program (CBG), North Carolina A & T University (NCAT) developed an online Master's in FCS to expand access to students around the state, particularly those wanting to pursue teacher certification. With FCS enrollment generally low in undergraduate programs across the country and decreasing numbers of individuals entering the field as teachers, it is essential to develop new and effective approaches to attract more individuals into the profession. NCAT recognized that there are many individuals in North Carolina and across the nation who have degrees in a specialized area of FCS who would like to become certified to teach in the public schools, but have barriers to doing so. Using a primarily virtual platform, NCAT's program provided an accessible and convenient option for obtaining an advanced degree and completing licensure requirements for teaching FCS from Grades 7-12. Twelve students were provided scholarships towards the completion of their degree requirements increasing the number of qualified teachers to fill the vacancies in North Carolina schools for certified FCS teachers.

Fostering collaboration between FCS extension professionals and FCS teachers has had a positive impact on each group as points of intersections and resources are identified (Abdul-Rahman, Bartley, Cummings, and O'Brien, 2013). Through another 1890 CBG project, Kentucky State University is developing a new FCS degree to increase the number of graduates and to also strengthen linkages between extension and the academic unit. The new major will reach a diverse student base and train students for careers in our field. The project will provide students opportunities to engage in various experiential learning opportunities alongside extension personnel, certified teachers, and other professionals in the field. Key intended outcomes are to increase undergraduate extension knowledge and educational opportunities in the field to strengthen the utilization of land grant resources in support of academic programs, expand collaborative efforts between extension and academic programs, and create a new pool of

diverse students trained to meet the needs and improve the well-being of individuals and families.

Understanding Our Families, Our Communities, and Our Field

NIFA funds research in the field of FCS which generates knowledge to improve the capacity of researchers and practitioners to work effectively with families, farms, and communities. Many of NIFA's competitive projects are integrated and provide the opportunity to include a combination of research, education and extension. The Agriculture and Food Research Initiative Competitive Grant Program for Childhood Obesity Prevention (USDA NIFA, n.d.) is an example of an integrated program, which focuses on reducing the prevalence of overweight and obesity among children and adolescents.

Through NIFA's Hatch Act Capacity Grant Program, researchers at land-grant institutions are enabled to engage in wide range of basic, applied, and developmental research on family life and human development spanning topics. Topics such as food insecurity strategies, online parenting education, healthy social-emotional development, health disparities, fatherhood programming, and military families have been investigated through funding provided by this program.

NIFA also supports small businesses to develop science-based technological innovations which are beneficial to the public through the Small Business Innovation Research (SBIR) program. An important objective of SBIR is to increase private sector commercialization of innovations derived from USDA-supported research and development efforts. In 2012, KickinKitchen.TV (KNTV), an innovative, digital, interactive educational program focused on nutrition, cooking and active lifestyles, was funded through a Phase II SBIR grant. This project combines digital technology, nutrition education, and research strategies to address NIFA's goal for childhood obesity prevention. KNTV is designed for middle school educators and after-school and community programs for use with students ages 10-14 to increase their awareness, knowledge, and skills related to healthy eating habits and sustainable changes in personal behaviors that will lower risk factors for childhood obesity. KickinNutrition.TV has demonstrated efficacy and commercial success reaching educators and students through the distribution of the KNTV curriculum to over 15,000 students in New York City, Massachusetts, and Florida within the school setting. KNTV has also been featured in New York City taxicab screens and NBA Cares has also promoted the curriculum. KNTV continues to make a positive impact on students, parents, and educators.

Focusing on Engagement

In addition to developing and administering grants programs, DFCS engages in leadership roles and collaborative efforts to prepare the next generation of FCS and human sciences professionals. One internal effort is working with colleagues in the Division of Community and Education to review requests for education grants to identify opportunities to elevate or include opportunities for FCS projects. For example, NIFA's Secondary Education, Two-Year Postsecondary Education, and Agriculture in the K-12 Classroom Challenge Grants (SPECAs) Program is an ideal funding opportunity for FCS teachers. SPECAs seeks to: (1) promote and strengthen secondary education and two-year postsecondary education in the food, agriculture, natural resources and human sciences in order to help ensure the existence in the United States of a qualified workforce to serve the FANH sciences; and (2) promote complementary and synergistic linkages among secondary, two-year postsecondary, and higher

education programs in the FANH sciences in order to advance excellence in education and encourage more young Americans to pursue and complete a baccalaureate or higher degree in the FANH sciences. We also work to communicate these opportunities to FCS leaders, researchers, and practitioners across the country through webinars, workshops, and stakeholder meetings.

National programs leaders also participate in the FCS Alliance, which is a unifying body of FCS organizations who seek to advance the field through a cohesive voice. Guided by the leadership of the American Association of FCS, a major success of the Alliance was to create the FCS Branding Initiative (American Association of FCS, 2015). The FCS Brand provided the field with a common visual identity through a logo and a common language to share our story. DFCS actively promotes the brand in the land-grant university system leading to its adoption by a substantial number of university partners.

DFCS also seizes opportunities to work with the dynamic members of the Family, Career, and Community Leaders of America (FCCLA) student organization. Annually, DFCS hosts the FCCLA “Red Jackets” at NIFA, giving them a platform with senior leadership and staff to share the impact of their national programs and how their work intersects with food and agriculture. NIFA colleagues also share information about their backgrounds and career paths with the FCCLA students creating a space for impromptu mentoring. NIFA staff outreach to students also includes hosting interns from throughout the year and speaking to students in various settings about careers in FCS.

Conclusion

The United Nations Department of Economic and Social Affairs (2015) estimates there will be over 9.7 billion people living on this planet in the year 2050. Each person will need to be fed, clothed, sheltered, cared for, and protected in an economically and environmentally-sustainable manner. Professionals in the FCS utilize their collective expertise to innovate and continually examine the strengths and influences of interlocking human and environmental systems to address these challenges. The education, research, and outreach in which we engage is reflective of global challenges related to health, hunger, poverty, the environment, diversity and the intellectual foundations of FCS. For this work to remain a cogent force in effectively addressing our most pressing challenges, we must ensure a thriving, diverse, well-trained workforce in FCS. USDA continues to positively impact FCS and offers many opportunities to advance this work and support for efforts to fill the pipeline for a new generation of educators and researchers.

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