

## Profiling Women In Agricultural And Extension Education

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### **Abstract**

Women in agricultural education at the secondary level are significantly under-represented, comprising only 14.6 percent of the total population. The evolution of women in the field of agricultural and extension education is not well documented. Knowledge about women who have pioneered positions in agricultural education provides valuable information for upcoming generations of female educators. The purpose of this descriptive study was to create a profile of women involved in agricultural and extension education at the post-secondary level. A questionnaire was sent to a census of women with teaching responsibilities listed in the 2001 AAAE directory. In establishing a profile, women in this study possess similar characteristics as their male counterparts in relation to job satisfaction, personal demographics and types of subjects taught. However, few women reported that other women served as their role models or that they, themselves, were serving as mentors to young female faculty members. Additionally, although women indicated a high level of satisfaction with their current job, more than two-thirds felt they had experienced barriers related to gender. Most common barriers cited were: lack of acceptance from peers and students; inequity related to status and benefits, balancing work and family, and a lack of strong role models who accept both males and females.

## Introduction and Theoretical Framework

*How do I find what life's about...unless I venture farther out.  
Something in me is not content...something affirms that I am meant for more,  
so I have to try...and see if somehow I can fly.  
Whatever now I seem to be...yet more is to be found in me.*

*--Author Unknown*

The human psyche seems to be ever striving for improvement, always seeking a higher level of achievement. Maslow noted that once the basic needs are met, we climb the ladder of more complex needs, until we reach a level that meets all of our inborn abilities. This is true for both male and female individuals (Maslow, 1970). Women seeking to climb the ladder of achievement in non-traditional fields often experience unique challenges to reaching the pinnacle.

Women accounted for 46% of the labor force in 1997 compared to 29% in 1950. As the face of the American labor force continues to change, more interesting facts are uncovered. For example, 90% of male executives under 40 are fathers. Conversely, only 35% of female executives under 40 are mothers (National Multicultural Institute, 1997). Another phenomenon observed is reference to the mythical “glass ceiling” first labeled in 1986. Two *Wall Street Journal* reporters coined the phrase in reference to the invisible barrier that blocks women from top jobs (Catalyst Report, 1993). Barriers inhibiting women in nontraditional fields are complex and inter-related. Often women do not receive appropriate education and training, and are provided limited information about opportunities in the field. In addition, limited role models, unsupportive family and friends and society’s vision of traditional female roles pose as ongoing obstacles (GenderWatch, 2001).

According to the U. S. Department of Labor, the ratio of women’s earnings to men’s earnings is still not balanced. In 1979, women averaged 59.7% of men’s salaries in similar positions. In 2000, women averaged 76% of their male counterparts’ salaries for an increase of only 20% (Women’s Bureau, 2001). Disparities also exist in the numbers of women represented in certain technical fields. The need for women in the field of science and engineering reflects a global situation. Canada reports only 5% of university faculty in engineering are women. Likewise females constituted only 25% of the faculty in biology in 1998. Intervention programs which promote the participation of women, have been criticized by some for diluting the quality of science delivered. The dilemma for Canada is how to change the traditional culture that limits the access of science and engineering to women (Williams, 2001). In the U.S. concern remains toward science and engineering fields and the lack of women participants. The Congressionally-mandated report on *Women, Minorities and Persons with Disabilities in Science and Engineering 2000* notes concern over the decline of women in computer science. Although the total number of degrees awarded in computer science has decreased over the past decade, the numbers of degrees awarded to women have declined faster than the number of degrees awarded to men (NSF, 2001).

Another nontraditional field for women is the United States Military. In 1901 the Army established the Army Nurse Corp. The Navy followed suit in 1908. It was not until

1944 that these women were granted full military status. World War I saw both the Navy and Marines allow women to enroll in their respective reserve systems. However, at the end of the war both of these units were demobilized. World War II brought a new approach to women in the military. Women were actively recruited for non-combat assignments. In 1948 the Women's Armed Services Integration Act allowed women other than nurses to serve in the armed forces during peacetime. This policy carried with it a ceiling of numbers of women to reach no more than 2% of the total military force. The ceiling on the number of women allowed was removed in 1967 (Y&M Magazine, 2001). Times change. In 1999, the US Armed Forces reported 14.0% of the active duty force was made up of women. Despite the fact that most military occupations are open to women, there are still barriers to be faced. Entire units are closed to women on the basis of privacy and sleeping accommodations, such as found on submarines. The Armed Services Vocational Aptitude Battery test contains sections based on exposure to a subject rather than aptitude. Women tend to score lower on sections such as automotive systems, keeping them from certain positions (Y&M Magazine, 2001).

Currently the US Department of Labor lists over 110 nontraditional occupations for women. Nontraditional is defined as any occupation where one gender comprises 25% or less of the total employed (USDOL, 2001). In 1998 Camp (2000) reported women comprised only 16.0% of secondary level agricultural education teachers. At the university level agricultural and extension educators make 14.7% of the reported faculty in the American Association of Agricultural Educators Directory.

The Cooperative Extension Service (CES) was born with the Smith-Lever Act in 1914 and designed as a partnership between the U. S. Department of Agriculture and the land-grant universities (Higher Education Resource Network, 2001). While addressing sustainable agriculture, researchers at Iowa State University surveyed agricultural and renewable natural resource agents in a 12 state area in the north-central region of the United States. This population reported 89.5% of the respondents were male (Jayaratne, Martin & DeWitt, 2001). An analysis of 1996 CES professional staffing data found in the USDA personnel subsystem indicates women and individuals who are culturally diverse are significantly under represented in the Cooperative Extension System. This was found to be true at all levels of senior management, in all regions of the country, in rural and urban areas and by length of service and tenure (USDA, ECOP - USDA, 1997). It is also important to note that women agents have historically been involved in the home economics and related sectors while men gravitated to agricultural related areas.

The April 1987 issue of *The Agricultural Education Magazine* featured Women in Agricultural Education as the focus. One article notes that one of the hurdles faced by the female agriculture instructor was the feeling of being alone. "Regardless of where I go, I am predominately around men...this not only deals with vocational agriculture instructors, but also in the classroom..." (Does, 1987). Even with the passage of the non-discrimination legislation, reality as experienced by women involved in agricultural and extension education dictates that legislation does not mandate cultural change. Thomas (1991) suggests that those who try to force today's reality into yesterday's management can only jeopardize the viability of that enterprise. He concludes that diversity is a commitment to all employees regardless of race or gender. Diversity is about empowering whoever is in the workforce; it is not an attempt at preferential treatment.

The American Society has chosen to function in a patriarchal society. A patriarchal society is one that is male-dominated, male-identified, and male-centered (Johnson, 1997). Legislation and cultural norms do not always work in harmony, especially when they are in conflict with cultural norms.

An example of lack of harmony might be reflective of the experience of women in nontraditional fields like agricultural education. The top three barriers facing women in agricultural education at the secondary level are acceptance by peers and other males in the agricultural industry, balancing family and career and acceptance by administrators (Foster, 2001). Barriers facing women and other minorities in extension include lack of commitment from senior managers and university administration, resistance of some clientele groups to work with staff from diverse backgrounds, and lack of specific goals and targets for attaining a diverse workforce (USDA, ECOP-PODC, 1997). If women have experienced these barriers at entry to mid-level positions in agricultural and extension education, the question becomes “Why do they attempt to move forward?”

In a traditionally male dominated field, like agricultural education, the concept of the “glass ceiling” is a real and dominant force. According to a 1999 survey by Catalyst, the barriers to women’s advancement as seen by successful women included: 1) male stereotyping and preconceptions about women, 2) exclusion from informal networks of communications, and 3) lack of significant experience (Catalyst, 2001). Also, artificial barriers based on attitudinal bias often prevent qualified women from reaching their potential. Due to the late entrance of women into the field of agricultural education there have been very few role models for women who advocate advancement to higher education levels. Young women entering the field need to feel that their hard work and educational fortitude has not been completed in vain. Determining a profile of women in post-secondary agricultural education will provide needed background for constructing environments that will lead to their continued success.

### **Purpose and Objectives**

The evolution of women in the field of agricultural and extension education is not well documented. Knowledge about women who have pioneered positions in agricultural education provides valuable role model information for upcoming generations of female educators. The primary goal of this study is to create a profile of women involved in secondary agricultural and extension education at the post secondary level. Specific research objectives for this study were to:

1. Describe women on selected personal characteristics of age, ethnicity, marital status, number and gender of children and time spent on family-related activities.
2. Describe women on selected professional characteristics including: employment history; prior teaching experience by discipline and number of years; current employment according to type of appointment, division of responsibilities, institutional affiliation, professional rank, types of classes taught, number and classification of advisees, supervision of student interns, salary, and affiliation with professional organizations.

3. Describe the educational background of subjects by type of degree, major area of study and institution attended, participation in agricultural and extension education programs during high school and aspirations for achieving additional degrees.
4. Identify perceived barriers/challenges experienced as a female agricultural educator.
5. Identify level of satisfaction with current position.
6. Describe experiences and roles as both a mentor and mentee in agricultural education.

### **Methods and Procedures**

This descriptive study sought to develop a profile of women in the agricultural and extension education at the post-secondary level. The population for this study was a census (N = 66) of women with teaching responsibilities listed in the 2001 Directory of the American Association of Agricultural Educators.

The instrument created by the researchers contained six sections designed to address the objectives of the study. Section One included open ended and categorical questions about the educational and professional background of the subject. Section Two sought information related to subject's current professional status. Sections Three and Four addressed roles as mentors and mentees within the profession as well as any perceived barriers and challenges that might have been experienced as a female educator. Section Five used both open ended and categorical items to gather demographic information about the subjects. Section Six provided the opportunity to share thought and comments about their experiences.

Face and content validity were assessed using a panel of experts in research/statistics, secondary teacher education and agricultural and extension education. Minor changes were made in the wording of some items. Reliability was assessed using a test-retest procedure with 22 women who were listed in the 2001 Directory of the American Association of Agricultural Educators but did not have teaching responsibilities. Thirteen (60.0%) responded. A minimum agreement of 85 percent on each of the questions was set *a priori*. No statements, questions or subcategories were changed.

Data were collected between March and May 2001 following a modified Dillman's (1978) procedures for a mail questionnaire. Instruments were coded with an identification number to track and follow up with non respondents. The first packet mailed contained the instrument, an incentive and a postage paid return envelope. Subjects were also given the opportunity to complete and submit the questionnaire electronically. Two complete mailings were administered. Telephone interviews were conducted with a random sample of 20% of the nonrespondents using the entire questionnaire as a guide. Data from these interviews were compared to data from completed questionnaires. No differences were found to exist and the results were generalized to the target population (Miller & Smith, 1983). The final usable response rate was 80.0 % (N = 53).

Descriptive statistics were used to summarize the data; frequencies, percentages, and measures of central tendency and variability. Comments were summarized and organized into topics or themes.

### **Results/Findings**

**Objective One: Describe women on selected personal characteristics of age, ethnicity, marital status, number and gender of children and time spent on family-related activities.**

A profile of women in agricultural education at the secondary level indicates that the majority are married (64.2%), or divorced, widowed or separated (20%). Only eight of the respondents (15.1%) reported never having been married. Almost 60% of women responding had children. Ages of women varied greatly. Sixteen women (30.2%) indicated they were 35 years of age or younger. Forty-one percent (22) of the women were between the ages of 36 and 50 and the remaining 25.3 percent were 51 or older. Ethnicity reported was predominately Caucasian (92.5%). The remaining respondents were equally distributed between Hispanic and African-American. Time spend on family-related activities varied greatly. The greatest amount of time was reported in the domestic (housework) category with an average of 8.8 hrs followed by recreation (5.5hrs) and the other category in which respondents listed items like sleeping and home renovations (3.9 hrs). The least amount of time spent per week was on school related activities (self and children) with an average of 1.5 hours per week.

Table 1  
Summary of selected demographic characteristics (N = 53)

<b>Characteristic</b>	<b>frequency</b>	<b>percent</b>
<b><u>Age</u></b>		
26-35	16	30.2
36-50	22	41.5
51-65	15	28.3
<b><u>Ethnicity</u></b>		
Caucasian	49	92.4
Hispanic	2	3.8
African-American	2	3.8
<b><u>Marital Status</u></b>		
Married	34	64.2
Never Married	8	15.0
Divorced/Widowed/ Separated	11	20.8
<b><u>Children</u></b>		
Yes	30	57.6
No	22	42.4

**Objective Two: Describe women on selected professional characteristics.**

Table 2 describes current employment information according to type of appointment held and Table 3 addresses professional rank and salary. Academic appointments by women in post secondary positions in agricultural education emphasize teaching. Only 34.0% of respondents had any official appointment time committed to research (through Agricultural Experiment Stations) while approximately 26% of respondents had appointments with the Cooperative Extension Service. The most commonly held professional rank was assistant professor (36.0%). Salary ranges varied greatly with the largest number of respondents (30.2%) reporting an annual salary of over 70,000. The next largest group (28.3%) made between 45,000 and 59,000 annually.

Table 2 Description of type of academic appointment held, professional rank and types of classes taught.

Academic Appointment	100%		75-99%		50-74%		< 50%		no appt.	
	f	%	f	%	f	%	f	%	f	%
Teaching	16	30.2	8	15.1	9	17.0	8	15.1	12	22.6
Research	0	0	2	3.8	1	1.9	15	28.3	35	66.0
Extension	4	7.5	5	9.4	1	1.9	4	7.6	39	73.6
Other	2	3.8	4	7.6	3	5.7	4	7.6	40	75.5

Table 3: Professional Rank and Salary

<u>Academic Rank</u>	f	percent
Professor	10	18.9
Associate Professor	12	22.6
Assistant Professor	19	35.8
Instructor	6	11.3
Specialist	2	3.8
Administrator	1	1.9
<u>Salary</u>		
> 70,000	16	30.2

60,000 - 69,000	9	17.0
45,000 - 59,000	15	28.3
< 45,000	10	18.9
no response	3	5.6

Table 4 illustrates a division of faculty responsibilities. Respondents were asked to select as many options as applied to their current position. The largest percentage of respondents (37.7%) reported teacher preparation or leadership (37.7%) as their primary responsibilities. As least reported were adult education (17.0%) and Research Design (17.0%). Courses taught varied greatly with 56 different courses identified in the “other category.” Among categories provided, the most frequently reported were leadership, teaching methods, and extension education

Twenty-nine respondents (54.7%) reported advising graduate students for an average of 2.3 hours per week, while 62 percent (32) reported advising undergraduate students for an average of 5.0 hours per week. On average faculty advised nine graduate students and 29 undergraduates. Other activities including teaching classes were reported as the activity in which most individuals spent their work time. Preparing for classes and conducting research followed these. (Table 5). Sixty percent (N = 31) of the respondents indicated that job responsibilities included supervision of students in intern experiences. Supervising student teachers was the type of intern

Table 4 Division of major faculty responsibilities

<b>Responsibility</b>	<b>frequency</b>	<b>percent</b>
Teacher Preparation	20	37.7
Leadership Development	20	37.7
Communications	16	30.2
Extension	16	30.2
Other	12	22.6
Administration	11	20.8
Technology/Distance Ed	9	18.9
Research Design	9	17.0
Adult Education	9	17.0

\* numbers total more than 53 as more than one category was checked

most frequently reported (28.0%), followed by communications (13.0%), industry (9.0%) and Extension (8.0%). Membership in AAAE (American Association for Agricultural Educators) was held by 57 percent (30) of those responding, while 27 (51%) reported membership in another or an

additional professional association.

Table 5. Time spent on various activities

Activity	frequency	average hours/wk
Other	39	13.8
Preparing for undergraduate classes	34	9.6
Conducting research	34	7.5
Preparing for graduate classes	27	4.4
Serving on committees	38	4.4
Advising student organizations/groups	24	2.0

### **Objective three: Describe the educational and work background of subjects.**

All of the women in post secondary positions responding to this study have earned a Master of Science/Arts degree while 85.0% indicated they received a PHD/ EDD. Educational degrees

and backgrounds leading to current employment varied greatly. Bachelor of Science degrees were most commonly received in Agricultural Education (24.5%), followed by Home Economics (22.6%) and Animal Science (15.1%). Master of Science/Arts degrees were most commonly in Agricultural Education (41.5%) followed by Home Economics (13.2%). Agricultural and Extension Education was the largest area in which PHD/EDD degrees were received with 41.5% followed by Adult Education (17.0%) and Vocational Education and Education with 15.0%. When asked if they were interested in achieving a higher degree, 17% indicated yes. Fifty-five percent of those responding indicated that they had previously been members of either 4-H or FFA. Of the two organizations, more respondents had been 4-H members. In addition, 60.0% reported ag-related work experience prior to entering the field of education. Work experiences varied greatly from working on the family farm to pharmaceutical sales. Prior to their current position at a post-secondary institution, 60.0 % of the respondents indicated that they had taught at the high school or middle school level. Of this group, 20 (37.7%) taught agricultural education. Twenty-eight percent reported previous employment experience with the Cooperative Extension Service ranging from one to 30 years of service. The average number of years reported as an educator was 16.4 years. The average number of years reported as working in post-secondary education was 11.8 years.

### **Objective Four: Identify perceived barriers/challenges experience as a female educator**

Women were asked if they had experienced any barriers that were a result of gender. Sixty-four percent responded positively. Specific barriers identified included lack of acceptance from peers and students, inequity in terms of status and benefits (salary, promotion), and balancing work and family. Comments from respondents reflect these trends. One individual commented, “ I feel that as a woman, I need more education and need to accomplish more

quality work than male counterparts to receive equal (or less) recognition for the work I do.”

Women were also asked to identify what they perceived to be the greatest barrier faced by women in agricultural education at the university level whether or not they had personally experienced the barrier. Responses were similar to those above. Comments include:

“ Respect from males; The “good old boy” network still exists; being seen as equals with men - both in rank and pay; few strong role models who accept both males and females; fitting - in; balancing home and work; and lack of support system of other females doing similar jobs.”

Subjects were also asked if they had made any personal sacrifices in order to reach their current level of professional achievement. Eighty-three percent (N = 44) indicated they did make personal sacrifices for their careers. However, when asked if they would do it again, only 56.6 percent said yes, four percent said no and the remaining 40.0% were undecided. Subjects provided many different comments, but the most common sacrifices dealt with loss of quality family time and sacrificing career and salary advancements. Although opinions varied regarding the degree of sacrifices made, most believed they did have to make hard choices. One individual stated, “my sacrifices were no more than anyone who wants to work in higher ed, have a dual career marriage, kids and maybe time for hobbies.” Yet another respondent stated, “I haven’t spent time for just “me time” or fun. I have missed spending time with my kids and husband. Household chores suffer.”

#### **Objective Five - Identify level of satisfaction with current position**

Overall women in post-secondary institutions in agricultural education were satisfied with their current position. and overwhelmingly (85.0%) would encourage others to follow their career path. Table 6. One woman stated, “ I find great satisfaction working with students at this level, also I feel there is a tremendous need for females to participate in research and teach out students primarily because they will offer a different perspective than our male counterparts.” However, not everyone agreed and one respondent made the following statement, “There are many, many other professional opportunities for young women today with fewer barriers and more advantages.”

#### **Objective Six - Describe experiences and roles as both a mentor and mentee in agricultural education**

Awareness of other women in agricultural and extension education in the same AAAE region was high. Eighty-three percent of the respondents indicated that they were aware of other women in their region and sixty-five percent indicated that they maintained regular contact. The largest percentage of respondents indicated that they communicated with another woman in agricultural and extension education at least once a week (31.0%) or by once a quarter (21.0%). The most commonly used methods of contact in descending order were by telephone, in person, or by email. The least used means of contact were letters and committee or professional meetings.

Table 6 Satisfaction with current job

<b>Level of Satisfaction</b>	<b>frequency</b>	<b>percent</b>
Very Satisfied	19	35.8
Satisfied	26	49.1
Neutral	6	11.3
Dissatisfied	1	1.9
Ready to quit	1	1.9

Women were also asked the extent that they received or gave encouragement or discouragement to other women involved in agricultural and extension education. Approximately two-thirds of the respondents indicated that they had both encouraged other women (69.0%) and received encouragement from other women (68.0%) in agricultural and extension education. An overwhelming 94% of women felt they had not discouraged other women in the profession, but only 25% felt they had received discouragement from another woman. One woman states, “It seems as a group in this profession we do well to encourage each other. I feel there have been several women in aged who have offered encouragement, mostly without their knowing it, they have done so by being role models for those of us early in our careers.” However, when subjects were asked if they provide regular (bi-monthly or more) mentoring to young female members in the profession, they majority response (72.0%) was no. Respondents identified primary their role models has either male (49%) or both male and female (45.3%). Only six percent identified their primary mentor as female.

### **Conclusions/Recommendations/Implications**

At many levels, women in post-secondary agricultural education possess similar characteristics as their male counterparts. They are satisfied with their jobs; age and salary ranges vary; they are predominately one ethnicity; and they teach a wide range of subjects with an emphasis on teacher preparation and communications. Educational and work background for the majority followed a traditional route, with the most degrees at all levels agricultural education or a related area. However, a non traditional finding is that several bachelor’s and masters degrees were in home economics. The U.S. Department of Labor (2001) defines nontraditional as any occupation where a gender comprises 25% or less of the total employees? A 1996 staffing report for the Cooperative Extension System reports women and minorities as significantly under-represented at all levels (1996, USDA-ECOP). Women in agricultural education at the secondary level are under represented comprising only 14.6% of the total population. After 75 years or existence, many questions arise to why this phenomenon exists. Is it because women got a late start in entering the discipline? Are the perceived barriers too much to try and overcome? Is balancing a career and a family more difficult in this profession than others? These questions and

others deserve further investigation.

Positive role models, mentors, and mentoring have long been documented as important elements in career development and transition. Few women reported that other women served as their role models or that they, themselves were serving as mentors to young female faculty members. Additional research identifying explanations would be beneficial. Is it related to the small number of women currently in the profession? Many women are the only female faculty member in their department. Could lack of mentoring be related not only to small numbers but to geographic distances? Or are there other factors?

Perception is reality. Women responding to this study reported experiencing specific barriers as a result of gender. These barriers are consistent with those previously identified in other disciplines as well as agricultural education (Catalyst Report, 1993; GenderWatch, 2001; Williams, 2001, and Foster, 2001). Awareness and communication are essential. Barriers (perceived or real) can not be addressed unless they are first made aware of and agreed that they exist. One person's reality may not be another's. If not addressed, the barriers identified by women in this study can ultimately lead to conflict, job dissatisfaction and disharmony. As educators we may need to educate ourselves about the perceived barriers and collaboratively develop strategies to overcome.

## References

Camp, W. (1999). A national study of the supply and demand for teachers of agricultural education in 1996-1998. American Association for Agricultural Education [on-line]. Retrieved on May 20, 2001 from the World Wide Web: <http://www.aaaeonline.org/>

Catalyst (1993, December) Successful initiatives for breaking the glass ceiling to upward mobility for minorities and women. (Report funded for USDA, Glass Ceiling Commission) New York: NY. Author

The Changing face of the United States. (1998, April). Value Added: Celebrate diversity in the College of Agriculture. 5 (4) 1. As cited in the National Multi-cultural Institute, 1997.

Commission on the Status of Women (1993). Employment. Genderwatch (05-31-1993), p. 1. Retrieved May 29, 2001 from the World Wide Web at: <http://www.newfirstsearch.oclc.org/WebZ/FTFE...entitymailfrom> = Genderwatch F

Dillman, D. A. (1978). Mail and telephone surveys: The total design method. New York, New York: John Wiley & Sons.

Does, E. (1987, April). Opportunities and challenges facing females in agricultural education. The Agricultural Education Magazine. 59 (10), 5-6.

Dyer, J. E. (2001) American Association for Agricultural Education Membership Directory. American Association for Agricultural Education [on-line]. Retrieved on January 31, 2001 from the World Wide Web: <http://www.aaaeonline.org/>

*Fact sheet on women in the United States military, Inside the news.* (2001). Y & M

magazine. Retrieved on September 5, 2001 from the World Wide Web:  
[http://www.afsc.org/youthmil/html/news/dec99/womil\\_pl.htm](http://www.afsc.org/youthmil/html/news/dec99/womil_pl.htm).

Foster, B. (2001). Women in Agricultural Education: Who are you? Proceeding of the National Agricultural Education Research Meeting. December 12, 2001. New Orleans, LA Available on the World Wide Web: <http://www.aaaeonline.org/>

Higher Education Resource Network., Smith-Lever Act, History and Archival Resources Retrieved on July 9, 2001 from the World Wide Web:  
<http://www.higher-ed.org/resources/smith.htm>

Jayarathme, K.S. U., Martin, R.A. & Dewitt, J.R. (2001). Perceptions regarding sustainable agriculture: Emerging trends for education extension educators. Proceedings of the 17<sup>th</sup> Annual Conference of the Association for International Agriculture and Extension Education, XVII., Baton Rouge, LA. Retrieved on July 9, 2001 from the World Wide Web:  
<http://ag.arizona.edu/aed/aiaee/conference/aiaee2001/proceedings/htm>

Johnson, A.G. (1997). *The gender knot*. Philadelphia, PA: Temple University Press.

Maslow, A. H. (1970). *Motivation and personality*. New York, NY: Harper & Row.

“Managing a diverse workforce in the Cooperative Extension System: ECOP-PODC, recruitment, selection and retention.” (1997, November). United States Department of Agriculture. Retrieved on July 31, 2001 from the World Wide Web:  
<http://www.reeusda.gov/ecs/workforc.htm>

Miller, L.E. and Smith K.L. (1983, September/October). Handling non-response issues. Journal of Extension, 21(5), 45-50.

National Science Foundation (2001). *Women, Minorities, and persons with disabilities in Science and Engineering 2000*. Retrieved on November 15, 2001 from the World Wide Web:  
<http://www.nsf.gov/sbe/snf00327/start.htm>

Official FFA manual, 2000-2001. Indianapolis, IN: National FFA Organization

Thomas, R. Roosevelt, Jr. (1991). *Beyond Race and Gender*. New York: American Management Intitute.

“Wage Gap.” (2001). Towson, University: Institute for teaching and research on women. Retrieved on September 5, 2001 on the World Wide Web:  
[http://www.towson.edu/~vanfoss/glass\\_ceiling.htm](http://www.towson.edu/~vanfoss/glass_ceiling.htm)

Williams, F.M. (2001). Access and merit: A debate on encouraging women in science and engineering. *Women-related web sites in science/technology*. Retrieved on July 10, 2001 from the World Wide Web: [http://research.umbs.edu/~korenman/wmstlinks\\_sci.html](http://research.umbs.edu/~korenman/wmstlinks_sci.html)

Women's Bureau, U.S. Department of Labor. (2001). Facts on working women.  
Retrieved September 30, 2001 from the World Wide Web:  
[http://www.dol.gov/dol/wb/public/wb\\_pubs/20fact01.htm](http://www.dol.gov/dol/wb/public/wb_pubs/20fact01.htm)

## Profiling Women in Agricultural and Extension Education

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Overall, this is a well –developed descriptive study on an important topic. The authors are to be commended for undertaking the work and attempting to answer the question of how women perceive themselves and their roles in agricultural education. To that end, the authors of this study have provided a useful snapshot of the current status, satisfaction and perceptions of women in postsecondary agricultural education. The authors include a strong, well researched literature review to make their rationale that women in post secondary agriculture and extensions education have different backgrounds and experiences than males, and that many perceive barriers related to their gender.

This descriptive survey study utilized a researcher-developed instrument and a modification of Dillman’s mailed survey technique to describe and assess the perceptions of 53 female respondents. Two waves were conducted by mail, achieving an overall response rate of 80%. The authors commendably include their attempt to control for non-response error through conducting telephone interviews with a random sample of 20% of the non-respondents. Descriptive findings were clearly presented with a combination of tables and narrative responses to open-ended questions.

The authors make some interesting implications with respect to perceived barriers and the potential import of role models and mentoring, which they qualify somewhat as needing further explication through future research.

Questions arising from the study are as follows:

- The authors use the small percentage of women in secondary agricultural education to as part of their rationale in describing females in post secondary agricultural education as underrepresented. Given the above, perhaps it would make sense to compare analysis of post secondary and secondary level women. Do these two groups differ in terms of their background, experience and perceptions?
- Although the size of the respondent pool is not large, some of the implications would be strengthened if the authors had conducted some tests of significance, for example looking at differences in respondents with and without children, and/or comparing assistant professors to associates and full, or those who have research appointments and those who do not.