

## **The Agricultural Economics Profession at 100 Years: A Profile and Projections for the Future**

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At this 100<sup>th</sup> anniversary meeting of the organization now known as the Agricultural and Applied Economics Association, a number of papers have and will examine the contributions we have made economic statistics, food and consumer economics, resource economics and so forth. This paper will also focus on where we have been as a profession and what the future holds. Rather than focusing on the intellectual contributions, I wish to focus on the resources side of our profession. That is, the number of economists who are employed in our educational institutions, where they are located, and what they do.

In a recently published paper (Perry, 2010), I conducted an extensive review of the trends in AAEA membership, agricultural experiment and extension funding and undergraduate and graduate graduation rates. Boland (2009) examined a number of issues associated with department leadership, using some information on faculty numbers by department at the land grant universities, and numbers of undergraduate and graduate degree recipients. Both of these papers are positive steps forward in understanding where we are as a profession, particularly when compared to what is in print from past years. Nevertheless, both fall short in addressing several critical questions about our profession:

- Exactly how many agricultural economists are working in teaching, research and extension;
- How are they funded;
- What are their areas of expertise;
- What does the age distribution of the profession look like;
- How many faculty are AAEA members.

The age distribution and AAEA membership numbers are particularly important. Although we do not know what the age distribution was historically for our profession, we do know who belonged to the AAEA. Therefore, if we assume membership as a percent of the profession has not changed markedly in the last decade or so, we can estimate what our profession looked like at that time. Such estimates become critical in determining how many faculty we have lost (mostly to retirements) and how many have been replaced. The replacement rate, in turn, becomes extremely useful in projecting retirements over the next decade and what the profession will look like at that point.

This paper will be organized into three sections. The first will focus on developing a profile for the profession in 2008, when these data were collected. This profile will include faculty numbers, educational levels, gender and location information. The second section will focus on the age distribution of the profession, current, past and projected into the future. This information can then be used to estimate what membership numbers will be, how the numbers will be distributed between research, teaching and extension, and projected areas of growth. The third section presents a probit analysis of AAEA membership, to identify which groups are most likely to join or shun membership in the association.

Before proceeding, it is important to state what population this study is focused on and what groups are being left out. The study year was 2008, specifically faculty employed in spring of

2008. The principal population for this study is agricultural economists at the Land Grant Universities, including

- On-campus tenured and tenure-track faculty;
- On-campus fixed term;
- Off-campus faculty (both permanent and fixed term);
- Faculty at both 1862 and 1890 Land Grant Universities.

Also included were agricultural economists located at Non-Land Grant Universities in departments offered agricultural economics or agribusiness undergraduate programs. In the case of merged departments, faculty members were included in this study if they held experiment station or extension appointments, or had responsibility teaching classes in agricultural economics or agribusiness. The study did not include the numerous graduates of agricultural economics who are faculty in non-Land Grant programs in Economics, Public Policy or related disciplines. Also excluded were faculty in administrative positions above the department level at Land Grant Universities; faculty in teaching positions outside the United States; and agricultural economists in government, private or NGO employment.

## **Section I – Current Profile of Agricultural Economists**

Table 1 and Figure 1 provide a summary of faculty numbers by state, by type of appointment, and by source of funding. About 2/3 of the agricultural economists considered in this study were tenured or on tenure-track appointments at Land Grant Universities. Although the largest percentage of these faculty held teaching appointments, their largest source of funding was from the experiment stations. Second in size was the off-campus LGU faculty, which are heavily funded from extension sources. The 1890 group was quite small and contains a mix of funding sources. The fixed term 1862 LGU faculty were mostly funded from extension and teaching sources. The other funding category represented a potpourri of sources, including endowments, university service, administration, and joint appointments with other colleges or special programs.

Almost 90% of 1862 LGU agricultural economists held split appointments between teaching, experiment station and extension. The most common combinations are summarized in Table 2. Nearly half of the faculty in this group holding experiment station-teaching appointments. The next largest group hold three way appointments.

Table 3 provides a breakdown of 1862 LGU tenured and tenure track faculty by university. The five largest departments are Purdue, Texas A&M, Michigan State, Minnesota and Cornell. When fixed-term and off-campus faculty are included in the mix, Michigan State becomes the largest program (77 faculty), followed by Texas A&M (70), Minnesota (55), Missouri (51), and Purdue (47). Texas A&M and Florida have the largest amount of FTE in teaching, Purdue and Minnesota are largest in terms of experiment station funding, and Purdue and Oklahoma St. have the largest amount of FTE funded by extension.

Figure 2 provides a summary of the average, median and modal ages of faculty employed in the five categories summarized in Table 1. The average age for tenured/tenure-track faculty at the 1862 LGUs in 2008 was 51 years, with the distribution negatively skewed. Particularly remarkable is that the modal age was 58 years. The distribution for the 1890 LGUs also exhibits

much the same age distribution pattern. The off-campus LGU faculty and those at the non-LGU teaching programs tended to be a bit younger (47.6 and 49.1 years) and are more normally distributed. The fixed-term LGU faculty were the youngest of the groups on average (46.2 years) and are positively skewed.

Consistent with the age data, 53% of the 1862 LGU faculty held the rank of professor, with 19% holding the Associate Professor rank, 14% the Assistant Professor rank and 14% being fixed term faculty. At the non-LGUs, the mix was much more balanced. Twenty seven percent held the professor rank, 24% the rank of associate professor, 21% were assistant professors, and 28% were fixed term faculty (mostly instructor rank).

Additional information about the characteristics of faculty in these five groups is provided in Table 4. AAEA membership was most heavily concentrated within the largest faculty group, the tenure/tenure-track 1862 LGU faculty. Nearly all faculty in this group held PhDs and a high percentage were male. The majority of the 1890 LGU faculty were also AAEA members. Membership in the AAEA was very poor for the fixed term 1862 LGU and the off-campus LGU faculty. In fact, the fixed term 1862 LGU faculty represented the largest contrast to the tenure-track faculty at the same universities, with the majority not holding PhD degrees and nearly 30% female. Also very striking was the small percentage of off-campus LGU faculty holding the PhD degrees.

Table 5 provides a summary of characteristics by region for the 1862 LGU tenure/tenure-track and off-campus faculty. Almost 2/3 of the on-campus LGU tenure/tenure-track faculty were located in the Midwestern and Southern regions of the United States. Those two regions also had the highest percentage of membership in the AAEA. The Northeastern region had the smallest number of faculty, the lowest percentage of membership in the AAEA and the largest percentage of female faculty. Over half of the off-campus LGU faculty were located in the Southern region. Over 1/3 of these Southern off-campus faculty held the PhD degree.

Identifying the mix of specializations that exist among faculty is a challenging endeavor. Faculty indicate their areas of specialization when they are AAEA members, but 1/3 of the 1862 LGU tenured/tenure-track faculty were not members in 2008. As well, many faculty work in a number of specialty areas, making categorization difficult. Nevertheless, an attempt was made to identify the primary area of specialization for each faculty member in this group, using AAEA membership information and information provided on faculty web sites. These results were summarized for the top seven major specialization areas and categorized by whether faculty held teaching, experiment station or extension appointments. The results are summarized in Figure 3.

The distribution of specialty areas in Figure 3 was nearly the same for faculty on teaching and research appointments, a result that is not surprising given half the faculty held both teaching and research appointments. About one in five of the research and teaching faculty specialized in resource and (or) environmental economics. Market and price analysis was the next most popular specialty area for both research and teaching faculty. About 1/3 of faculty had specialty areas not included in the top eight, suggesting the diversity of faculty interests within the profession. The appointments for extension faculty differed markedly from those in teaching and research. Specifically, farm management was the dominant area, with 20% of all extension faculty. Community development was also a much larger proportion of extension specialty areas

than was the case with teaching and research faculty. The dominance of farm management is even more pronounced for the off-campus LGU faculty (not shown), where nearly 2/3 hold appointments in farm or agribusiness management.

## **Section II – Profile of Faculty by Age**

Information about faculty degrees and the year they were awarded was collected from past AAEA directories, as well as faculty websites and by making personal contact with faculty. Year born was also determined using data reported in past AAEA directories, as well as information provided on the internet. When both the year of birth and baccalaureate degree year were available, a comparison showed that students were consistently 21-23 years old when receiving the BS degree. Therefore, information about the year the BS degree was awarded was used to estimate the year of birth for 15% or so of the faculty where birth information wasn't available. A summary of the results by birth year are provided in Table 6.

As noted before, the distribution is negatively skewed, reflecting the predominance of faculty over 50 in the profession. In fact, there were more faculty 60 and older (233) than 40 and younger (208). Faculty in their 50's outnumbered those in their 40's by 50%. In short, this is a profession poised to experience a major turnover in faculty over the next decade. Also noteworthy in the table is the general downward trend in AAEA membership as faculty age and the overall increase in the number of female faculty in the younger ranks of the profession.

Given these trends by age, how do faculty numbers break out by appointment type? A summary of faculty FTE by age and type of appointment is given in Table 7. Although the differences between appointment types are not dramatic, they are distinct. Research faculty tend to be the youngest group, with 22% of the research FTE held by faculty under 40 and 53% held by faculty above 50. Faculty with teaching appointments exhibited much the same pattern as the research faculty, but were a bit older. Extension faculty exhibited more noticeable differences, with only 18% of the FTE held by faculty under 40 and 61% held by faculty above 50. Another trend not shown in this table is that younger faculty tended to have smaller total FTE appointments, suggesting a great proportion of younger faculty on 9-month appointments. Despite this trend, however, less than half (40%) of all faculty were on 9-month or less appointments.

An examination of faculty specializations by age provides trend information on the relative importance of these specializations over time. A summary of these trends is provided in Table 8. Again, as with Table 7, the shifts over time are not seismic, but a few trends are noteworthy. Production economics and commodity policy specialists seem to be declining in importance. Areas like farm management, marketing and community development may be in decline, but the data do not provide a clear trend in that direction. Two areas that do seem to be growing over time are agribusiness and resource and environmental economics. The reason for growth in agribusiness is likely tied to undergraduate programs, which have been trending upward in the last 20 years (see Perry). The reasons for growth in the resource and environmental economics is less clear cut, but is probably a combination of (a) increased growth in environmental science-related degrees, spurring demand for economics service courses; (b) grant opportunities in the resource and environmental economics area and (c) employment opportunities for graduate students in this area in academics and in the private sector.

By applying the membership percentages in Table 6 to AAEA membership lists in the 1995 and 2000 directories, one can begin to estimate what profession numbers were in those years. This method is problematic for all groups but the 1862 LGU Tenured/Tenure-Track faculty, so no attempt was made to reconstruct membership numbers for those groups.<sup>1</sup>

Based on this process, there were 1267 Tenured/Tenure-Track agricultural economists at the 1862 LGUs in 1995 and 1269 in 2000. Figure 4 illustrates the shifts that took place during this five year period. The period 1995-2000 saw a net increase of 143 faculty who were in the 26-46 age bracket by 2000. During that same time there was a loss of 159 faculty who were 60 and older by 2000. The group ages 46-60 generally was unchanged, with a net increase of 18. Consequently, the group of tenured/tenure-track faculty remained largely unchanged in numbers during that period. Note that during this same period:

- Gross Domestic Product increased by 34% from 1995 to 2000;
- Employment of full-time and part-time faculty at public universities from 1995-2001 increased by 17% (U.S. Department of Education);
- Graduation numbers from undergraduate programs in agricultural economics, agribusiness, environmental economics and related programs declined by 1% (Perry);
- Graduation numbers for graduate programs in agricultural economics declined by 14% (US Department of Education).

In essence, although the economy was in good shape and universities were expanding, stagnant student numbers in agricultural economics contributed to essentially no change in faculty numbers.

Another interesting observation from Figure 4 is the presence of two distinctive spikes in faculty numbers, corresponding to faculty born around 1942 and 1951. The group born around 1942 received their PhD degrees in the late 1960's and early 1970's, a time where there was rapid growth in university enrollments, major expansion in international aid programs, and growth in resource and environmental economics research. The second spike is more difficult to explain. Faculty born in 1951 received their PhD degrees in the late 1970's and early 1980's. During that time university enrollments were stable at the undergraduate level, although agricultural economics programs reached all time highs in MS degrees awarded. Faculty hired from this era had disproportionately large extension appointments, suggesting there was a major influx of extension funding during this period.

The 2000 to 2008 period, by contrast, was a period of significant decline in tenure/tenure-track agricultural economists at the 1862 LGUs (see Figure 5). This eight year period saw the employment of 159 new faculty ages 26-46 (in 2008), or just 10% more hires in this eight year period than occurred in the previous five year period. There was significant attrition, however, with an estimated 331 faculty (ages 59 and up) leaving their tenured positions from 2000 to 2008. Of the middle group (ages 47-58), there was a net loss of 83 faculty. In total, there was a net loss of 254 faculty from 2000 to 2008, or 20% of the faculty numbers.

The reasons for the losses were at least partly demographic. The first spike of faculty born around 1941 largely retired from 2000 to 2008. The agricultural economics departments were

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<sup>1</sup> These other four groups are much smaller and had much lower membership levels in 2008, such that variations could cause major shifts in membership estimates from 1995 to 2000 to 2008.

able to replace most of these positions, but the net loss of positions was still quite high. And clearly there were few new positions added during this time period. To put this period in context:

- Gross Domestic Product increased by 45% from 2000 to 2008;
- Employment of full-time and part-time faculty at public universities from 1999-2007 increased by 23% (U.S. Department of Education);
- Graduation numbers from undergraduate programs in agricultural economics and agribusiness declined by 6% (U.S. Department of Education);
- Graduation numbers for graduate programs in agricultural economics increased by 7% from 2000 to 2008 (U.S. Department of Education).

In this case, a strong economy, continued growth in university faculty numbers and growth in agricultural economics graduate degrees were not enough to protect the departments from a substantial drop in faculty numbers.

In addition, the decline in faculty numbers was uneven across the United States. Table 9 summarizes AAEA membership by region in 1995, 2000 and 2008 for 1862 LGU tenure/tenure-track agricultural economists. The Midwestern and Southern regions have done relatively well in minimizing their faculty losses since 1995. Hardest hit has been the Northeastern region, which has lost fully 1/3 of their AAEA membership from 1995 to 2008.

On the surface one might attribute these results to the relative economic clout of agriculture and natural resources in these various regions. Yet that explanation does not seem to tell the entire story. Departments in the Southern region have done the best in holding onto faculty positions, yet the agricultural and natural resource share of GDP is half that of the Midwestern region and below that in the Midwest. Agriculture and natural resource share of GDP in the Western region is second to that of the Midwest, yet their faculty losses have been much larger than the Southern or Midwestern regions.

A possible explanation can be found when comparing Tables 5 and 9. The Southern region had the largest proportion of off-campus faculty, it was the region that lost the fewest number of on-campus tenure-track faculty. The next largest group of off-campus faculty was located in the Midwest, which had the second largest group of off-campus faculty. The Northwest region, which suffered major faculty losses in the past decade, has almost no faculty in off-campus positions. So perhaps preservation of faculty positions can be attributed to the local linkages that agricultural economists have with farm operators and agribusiness firms.

Comparisons between the 2000 and 2008 membership numbers by age can provide a sense of the rate at which faculty might be expected to retire over the next eight year time period (2008-2016). Using these retirement rates and the 2008 profile for the profession, it is estimated that 360 tenure/tenure-track faculty will leave their positions between 2008 and 2016. If the 2000-08 replacement rate of 80% holds over the next eight years, the profession can expect to welcome 288 new faculty into tenure/tenure-track positions. That would leave the 1862 LGU agricultural economics departments with 945 faculty. By that point most of the faculty in the second hiring spike (born around 1951) will be retired, so losses beyond 2016 should abate.

Of course, the current economic situation and its long term prognosis leave these projections very much open to question. There were 20% losses in faculty when GDP averaged +5% per

year, what will happen when economic growth averages half that rate? The downturn in the economy has spurred enrollments in universities, so departments that can grow their educational programs may be able to hold onto faculty positions. The downturn in the economy and resulting decline in tax revenues does not bode well for positions funded through the experiment station or extension service.

### **Part III – Probit Analysis of Membership**

Given the continued decline in AAEA membership and the projections that tenure/tenure-track faculty numbers are slated to decline further, identifying factors that reduce or increase membership would seem to be a useful activity. Another way to state this is that individuals possessing certain characteristics may feel disenfranchised by the association, in which case their probability of being a member would go down. Those particularly well served by the association, those who feel they are getting value for their membership, would likely have a higher probability of membership. A probit analysis of AAEA membership was conducted using information from all five groups of agricultural economists included in this study.

The dependent variable (AAEA membership) was set to 1 if the faculty member belonged to the AAEA in 2009, and zero otherwise. Note that this is one year off from the 2008 list of faculty in the profession, but was judged to be close enough to use in this analysis. A number of factors were hypothesized to explain AAEA membership. These included:

- Faculty age (year of birth)
- Faculty gender (1=Male, 0=Female)
- Highest degree held by faculty member
- Type of institution where working (1862 LGU, 1890 LGU, Non-LGU)
- Location of position (on-campus or off-campus)
- Nature of appointment (tenure/tenure-track or fixed term)
- Specialty area
- FTE mix between academic programs, experiment station, and extension
- Region of the United States (Midwest, Southern, Western, Northeastern)

The highest degree was further divided into four categories: PhD, MS, MBA and JD. A few faculty with other degrees were present in the initial data base, but were dropped prior to the estimation process. The areas of specialization included (a) agribusiness, (b) farm management, (c) marketing and price analysis, (d) resource and environmental, (e) international trade, (f) community development, (g) finance, (h) production, (i) international development and (j) agricultural policy. The variables for a PhD degree, Midwestern region, and tenure/tenure track faculty at an 1862 LGU were dropped for estimation purposes.

The estimation was conducted using the STATA statistics/data analysis package. The data base consisted of 1458 observations. The regression results are summarized in Table 10. The Chi-squared test (27 df) was 310.64 and the Pseudo R<sup>2</sup> value was 0.1552.

Several results from the probit analysis were hinted at in the earlier analysis of the data. For example, the age variable was positive and significant, meaning that as their birth year goes up (i.e., they become younger), their probability of joining the association increases. So the association continues to do a good job of attracting young faculty into its ranks. Also, as was



suggested in Table 4, membership is significantly lower for the fixed term faculty, those located off-campus, and those employed in non-LGU teaching programs. What becomes clearer from this probit analysis is the degree to which faculty holding the MS as their highest degree are underenrolled within the association. The coefficients for the MS and MBA degrees were negative and the largest of any considered in the analysis. Also interesting is that this disaffection with the association was much less pronounced among those holding the JD degree.

The gender coefficient was small and quite insignificant. The funding source of a faculty member's position (administration, experiment station, academic programs, extension) also had no significant impact on AAEA membership. Membership by area of specialization produced mixed results. Faculty working in the core traditional agricultural economics areas – farm management, marketing and price analysis, finance, production and commodity policy – were significantly more likely to hold membership in the AAEA than those in the default (other) specialty areas. Agribusiness faculty, though working in a newer area of specialization, also seemed to be well served by the association. Faculty working in international trade also were significantly more likely to hold membership in the AAEA. Participation by those in resource and environmental economics and international development seemed at a level below the so-called core agricultural economics area. Membership levels by those in community development were the lowest among the groups considered, although not significantly different from the default group. It seems likely that the lower participation levels by these last three groups are tied to good alternative organizations that exist for these groups – AERE for the resource and environmental faculty, the IAAE for faculty working in international development, and a number of regional science groups for community development specialists.

All three regional variables were also negative and significant. Table 5 illustrated a lower enrollment rate for faculty from the Western and Northeastern regions, so these results were not surprising. The significantly lower enrollment for faculty from the Southern region was more surprising. A likely explanation for these results is the presence of strong regional organizations in all three areas (WAEA, SAEA, and NAREA) and the lack of a similar organization in the Midwestern region. Taken together with the results by specialty area, these results illustrate that the AAEA does operate in a market for its services. When there are good alternatives to the AAEA available to faculty, some will elect to not join the AAEA.

## **Summary and Closing Thoughts**

This study provides an examination of the agricultural economics profession at the 100 year anniversary mark, particularly emphasizing those working as faculty at the LGUs and the non-LGU teaching programs. About 1500 agricultural economists were identified in the group, of which about 2/3 are tenure/tenure-track faculty at the 1862 LGUs. Although 2/3 of these faculty are funded through teaching dollars, FTE support from the experiment stations and extension service are each nearly as important as dollars flowing from academic programs. Virtually all experiment station support is directed to tenure/tenure-track faculty at the 1862 LGUs. Extension dollars also go mostly to this group, although a sizeable amount also goes to support off-campus faculty. Academic program support is virtually the only source of money for the non-LGU teaching faculty. Resource and environmental economics is the most common faculty specialty area among the tenure/tenure-track 1862 LGU faculty on campus, whereas farm and agribusiness management dominate among the off-campus LGU faculty.

The agricultural economics profession is on average over 50 years old, with the largest single group nearing their 60<sup>th</sup> birthdays. There apparently were two major hiring surges within the profession – one in the late 1960's and early 1970's and another about 10 years later. Much of that first group has retired over the last decade, but about 20% were not replaced. In fact, many of the 80% positions that were refilled were redirected to other specialization areas – particularly agribusiness and resource and environmental economics.

The near future for the profession is also not particularly rosy. The Great Recession has put major downward pressure on university budgets, with little relief in sight. Equally important, a large group of faculty are slated to retire from 2008-2018, making those positions a tempting target for administrators seeking to cut costs. This is particularly true for experiment station and extension service funding, which are not tied to student enrollment. Based on the Perry study, trends for the first six years of the 21<sup>st</sup> Century were up for undergraduate and graduate enrollments in agricultural economics. The large numbers of high school graduates in the United States, coupled with the dismal employment prospects, have students enrolling in university programs in record numbers. If the agricultural economics programs can capture a disproportionate share of those students (and accompanying tuition dollars), it may slow or perhaps stop the loss of agricultural economists from the LGU and non-LGU teaching programs. Otherwise, one should expect that the replacement rate will be even lower than the 80% recorded from 2000-08.

This situation places the AAEA at something of a crossroads. One option is to accept these trends and make plans to restructure the association to serve a smaller number of members in the coming decade. A second option is to target those groups that are under enrolled in the profession and provide better programs and services to them. The following are three suggestions as to how this might be done:

1. As noted, the association operates in a marketplace to enroll faculty. When good substitutes exist, the association is losing membership to those groups. At present, the association makes it convenient to join these other groups while signing up for AAEA membership. The profession needs to take this a step further by offering discounts to faculty who enroll in more than one association. This would actually be a win-win solution for everyone. Many faculty are likely choosing to enroll in the AAEA or WAEA (for example), rather than both. By offering discounts for multiple memberships, all associations will gain membership. The cost of the discount can be shared among the groups.
2. Anecdotal examination of the faculty lists from 1995, 2000 and 2008 suggest that a number of faculty move in and out of AAEA membership. This may be partly tied to #1, they only want to pay for membership in one association and so choose to join or renew with one of the alternatives to AAEA. But there are also some who simply let their memberships lapse because (for example) they don't plan on attending any meetings. To counter this action, faculty could be given financial incentives to renew their membership in the profession. A differential dues system could be implemented where faculty are

given a 10% discount if they are renewing their membership versus signing up for the first time.<sup>2</sup>

3. The group that seems most disaffected by the current AAEA organization are faculty holding the MS degree. Many of these are working in off-campus extension positions or in on-campus fixed term positions. The association needs to dialogue with these groups, learn better what their needs and wants are, then set about to address those needs and wants.

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<sup>2</sup> The recent decision by the AAEA to cut annual dues and increase meeting costs could well increase renewals, but explicit rewards for renewing membership should provide additional motivation.

Boland, M.A. "Leadership Development in Agricultural Economics." *J. Agricultural and Resource Economics* 34(2009):367-382

Perry, G.M. "What is the Future of Agricultural Economics Departments and the Agricultural and Applied Economics Association?" *Applied Economic Perspectives and Policy* 32(2010):117-134.

U.S. Department of Education, National Center for Education Statistics. *Digest of Education Statistics*. Table 230, 2003 Tables and Figures. Available online at <http://nces.ed.gov/programs/digest/d03/tables/dt230.asp>

Table 1. Summary of Faculty Numbers and FTE by Type of Appointment and Funding Source

	Teaching		Experiment Station		Extension		Other		Total	
	#	FTE	#	FTE	#	FTE	#	FTE	#	FTE
<b>Tenured/Tenure Track 1862 LGU On-Campus Faculty</b>	845	304.5	781	352.4	360	188.9	165	26.5	1017	872.2
<b>Non-Tenure Track 1862 LGU On-Campus Faculty</b>	57	34.2	24	14.5	73	58.7	53	43.2	168	107.4
<b>Off-Campus 1862 LGU</b>	2	1.4	17	5.9	164	151.5	1	0.5	167	158.7
<b>1890 LGU Faculty</b>	31	13.3	32	14.6	7	3.5	11	6.7	45	31.4
<b>Non-Land Grant (Teaching)</b>	134	95.3	0	0.0	0	0.0	0	0.0	133	95.3
<b>Total</b>	1069	448.7	854	387.3	604	402.6	230	76.9	1530	1062.3

Fig. 1 Agricultural Economics Faculty by Appointment & Institution Type

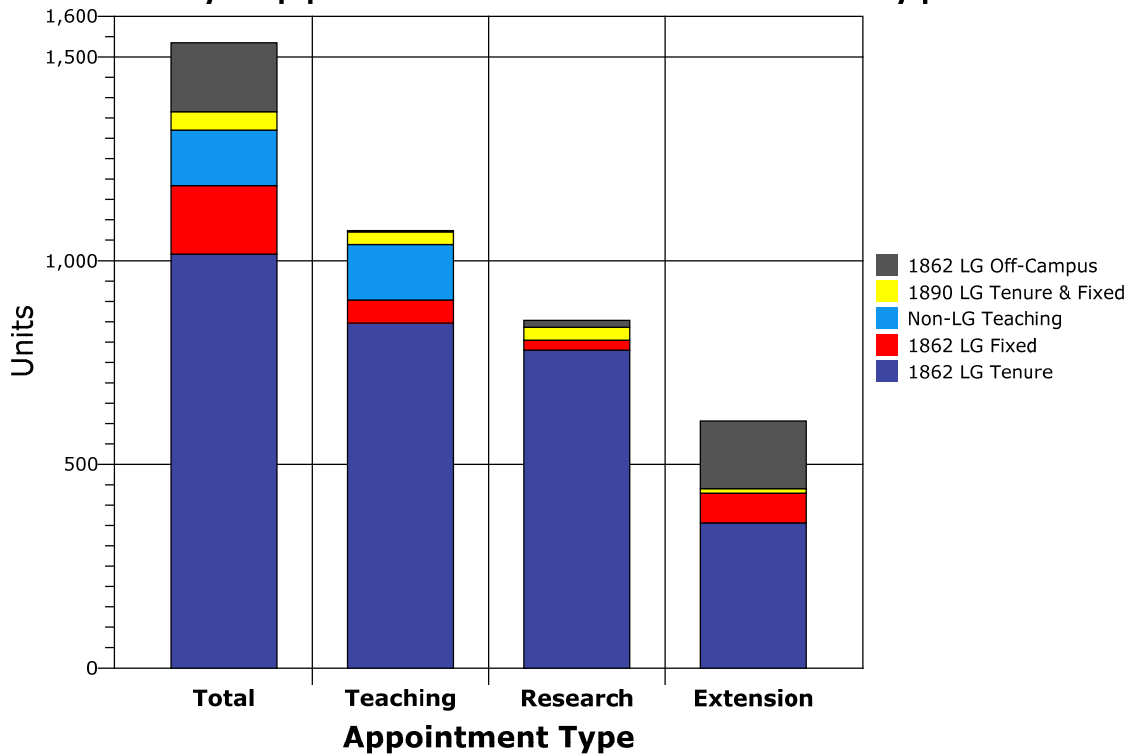


Table 2. 1862 LGU Tenure/Tenure-Track Faculty by Appointment Split

<b>Appointment Splits</b>	<b>Number</b>	<b>FTE</b>
Research-Teaching	485	429
Teaching-Research-Extension	126	116
Extension Only	64	61
Extension-Teaching	64	62
Research-Teaching-Other	61	51
Extension-Research	50	45
Teaching Only	49	38
Other	118	70

Table 3. Faculty Numbers and FTE by 1862 Land Grant Universities (Tenure/Tenure Track Only)

<b>State</b>	<b>Teaching</b>		<b>Experiment Station</b>		<b>Extension</b>		<b>Other</b>		<b>Total</b>	
	<b>Number</b>	<b>FTE</b>	<b>Number</b>	<b>FTE</b>	<b>Number</b>	<b>FTE</b>	<b>Number</b>	<b>FTE</b>	<b>Number</b>	<b>FTE</b>
Auburn	15	6.04	12	5.67	10	6.70	4	0.59	23	19.00
Alaska-Fairbanks	1	0.30	1	0.70	0	0.00	0	0.00	1	1.00
Arizona	13	3.15	14	9.05	3	1.80	0	0.00	14	14.00
Arkansas	14	3.76	13	9.27	5	1.98	0	0.00	15	15.00
Cal-Berkeley	18	4.60	18	10.01	3	1.23	1	0.00	19	15.84
Cal-Davis	19	11.38	20	7.72	5	5.00	2	0.00	25	24.10
Cal-Riverside	4	2.00	4	2.00	0	0.00	0	0.00	4	4.00
Colorado St	17	8.80	12	4.67	6	3.03	0	0.00	17	16.50
Connecticut	9	3.74	7	3.18	6	1.38	2	0.00	10	8.30
Delaware	7	2.30	7	3.45	0	0.00	0	0.00	7	5.75
Florida	28	13.61	26	12.94	11	6.45	1	1.00	34	34.00
Georgia	19	5.43	20	12.28	5	2.46	1	0.52	22	20.69
Hawaii	6	1.47	6	2.93	3	1.85	1	0.00	7	6.24
Idaho	11	2.71	13	8.29	3	1.75	0	0.00	13	12.75
Illinois	26	7.97	30	11.28	8	3.26	0	0.00	30	22.51
Purdue	40	11.85	35	17.35	24	11.65	4	3.00	45	43.85
Iowa St	28	5.58	26	10.77	8	4.23	24	0.51	34	21.08
Kansas St	24	7.69	22	5.88	13	5.04	27	2.10	27	20.71
Kentucky	20	4.26	13	7.72	10	7.20	0	0.00	20	19.18
Louisiana St	14	3.65	20	12.00	12	7.70	1	0.00	24	23.35
Maine	10	3.05	7	3.01	1	0.90	2	1.03	10	7.99
Maryland	17	6.11	18	5.78	7	1.96	2	0.90	19	14.75
Massachusetts	13	4.88	13	3.90	13	0.49	13	0.74	13	10.00
Michigan St	35	12.03	30	11.77	15	7.09	9	0.00	41	30.88
Minnesota	32	12.63	35	14.14	12	6.19	3	0.00	37	32.96
Mississippi St	12	3.64	11	5.12	10	7.02	2	0.46	18	16.24
Missouri	15	6.98	16	7.88	7	6.15	0	0.00	24	21.00
Montana St	7	3.05	7	3.95	3	3.00	1	0.00	11	10.00
Nebraska	16	5.65	15	8.56	6	3.80	1	1.00	20	19.00
Nevada-Reno	8	2.09	8	4.97	2	0.95	0	0.00	9	8.00
New Hampshire	8	2.83	7	2.63	1	0.80	0	0.00	8	6.25

Rutgers	10	5.10	6	1.73	4	1.68	1	0.25	11	8.75
New Mexico St	12	3.53	8	5.15	6	2.72	3	2.60	14	14.00
Cornell	34	11.00	35	13.44	12	1.90	1	0.00	35	26.34
North Carolina St	17	4.70	20	6.55	14	8.07	8	0.24	26	19.56
North Dakota St	11	2.50	12	6.50	2	0.65	0	0.00	12	9.65
Ohio St	22	7.91	20	6.41	13	4.37	1	0.00	24	18.69
Oklahoma St	23	6.92	20	11.02	15	9.81	3	3.00	31	30.75
Oregon St	12	3.08	11	4.84	7	4.46	1	0.00	15	12.37
Penn St	17	6.34	15	5.12	11	5.42	5	2.63	24	19.50
Rhode Island	11	6.89	4	0.68	0	0.00	4	0.26	11	7.82
Clemson	12	7.95	5	1.86	6	2.94	0	0.00	15	12.75
South Dakota St	10	4.01	8	5.15	5	4.00	1	0.00	14	13.15
Tennessee	14	4.30	15	10.94	6	4.76	0	0.00	20	20.00
Texas A&M	32	16.16	30	9.50	12	9.57	2	0.58	42	35.80
Texas Tech	15	10.75	2	0.50	0	0.00	2	1.00	15	12.25
Utah St	8	3.79	5	1.90	4	2.97	4	0.93	11	9.59
Vermont	4	1.82	5	1.22	1	0.70	1	0.50	5	4.24
Virginia Tech	20	8.97	17	8.73	7	3.62	3	0.34	25	21.65
Washington St	16	4.26	12	5.55	7	2.72	3	0.00	16	12.52
West Virginia	10	2.87	11	4.83	0	0.00	7	1.80	13	9.50
Wisconsin	16	4.64	20	7.19	10	5.19	0	0.00	23	17.02
Wyoming	13	3.81	14	4.74	6	2.30	14	0.50	14	11.35
Total	845	304.5	781	352.4	360	188.9	165	26.5	1017	872.2

Figure 2. Age of Agricultural Economist Faculty by Institution Type

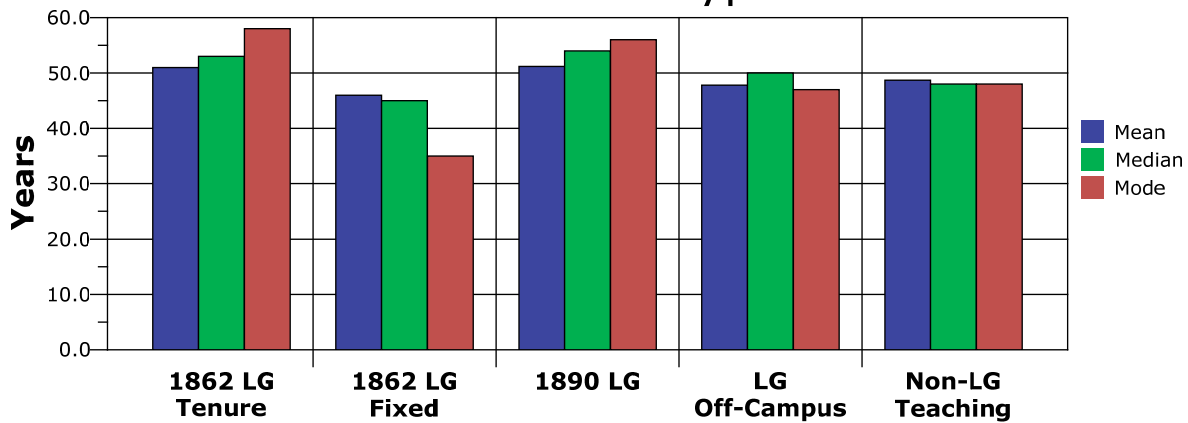


Table 4. Faculty Characteristics by Institutional Category

Institutional Category	Number	Percent AAEA Members	Percent Holding PhD Degree	Percent Male
On-Campus Tenure/Tenure Track 1862 LGU	1017	66	99	85
On-Campus Fixed 1862 LGU	168	21	44	73
Off-Campus 1862 LGU	169	22	32	80
1890 LGU	45	53	80	80
Non-LGU Teaching Faculty	133	38	84	82

Table 5. Characteristics of 1862 LGU Faculty by Region

Region	Number Faculty	Percent AAEA Members	Percent Holding PhD Degree	Percent Male
<b>On-Campus (Tenure/Tenure Track Only)</b>				
Western	192	62	99	81
Midwest	331	75	98	85
Northeast	166	51	98	83
Southern	327	69	98	89
<b>Off-Campus</b>				
Western	22	36	32	73
Midwest	54	19	24	83
Northeast	2	0	0	50
Southern	91	22	36	80

Figure 3. Specialty Area by Appointment Type

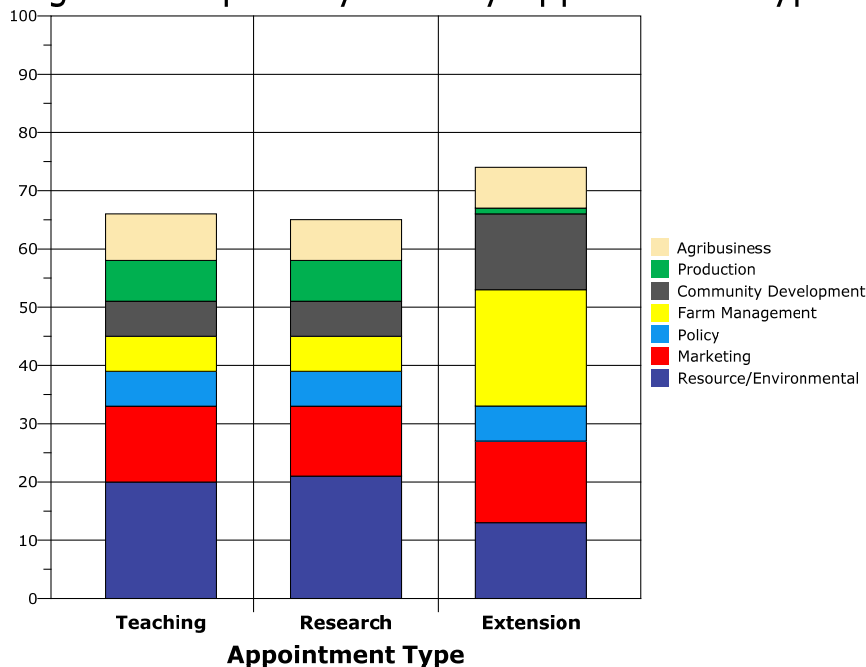




Table 6. Age Distribution and Descriptive Information for Tenured/Tenure Track 1862 LGU Agricultural Economists

Year Born	Average Age in 2008	Number of Faculty	Percent AAEEA Members	Percent Male
1929-31	77-79	2	0%	100%
1932-34	74-76	4	75%	100%
1935-37	71-73	12	58%	100%
1938-40	68-70	16	69%	94%
1941-43	65-67	66	61%	97%
1944-46	62-64	69	59%	90%
1947-49	59-61	99	57%	96%
1950-52	56-58	133	60%	89%
1953-55	53-55	113	68%	85%
1956-58	50-52	76	76%	87%
1959-61	47-49	90	63%	84%
1962-64	44-46	68	72%	81%
1965-67	41-43	60	63%	80%
1968-70	38-40	66	76%	79%
1971-73	35-37	50	76%	68%
1974-76	32-34	52	73%	69%
1977-79	29-31	33	82%	67%
1980-82	26-28	7	71%	100%

Table 7. Distribution of 1862 Tenure/Tenure-Track LGU Agricultural Economists by Age and Type of Appointment

Age	Teaching FTE	Percent of Total	Research FTE	Percent of Total	Extension FTE	Percent of Total
Under 40	64.4	21	76.1	22	34.2	18
41-50	68.8	22	90.2	26	38.6	21
51-60	108.6	36	121.0	34	75.6	40
Above 60	64.4	21	65.5	19	38.4	21

Table 8. Percent of 1862 LGU Tenure/Tenure Track Agricultural Economists by Age and Area of Specialization

Specialization	Over 60	51-60	41-50	40 and Below
Resource & Environmental	17	16	21	22
Markets & Price Analysis	11	14	12	11
Farm Management	10	8	10	5
Agribusiness	6	4	9	11
Community Development	8	8	6	6
Production	5	9	5	3
Commodity Policy	7	6	5	4
International Trade	3	5	5	5
International Development	6	3	6	2
Agricultural Finance	0	2	3	3
Other	24	24	19	28
Total	100	100	100	100

Figure 4. 1862 Tenure/Tenure Track Faculty in 1995 & 2000 By Birth Year

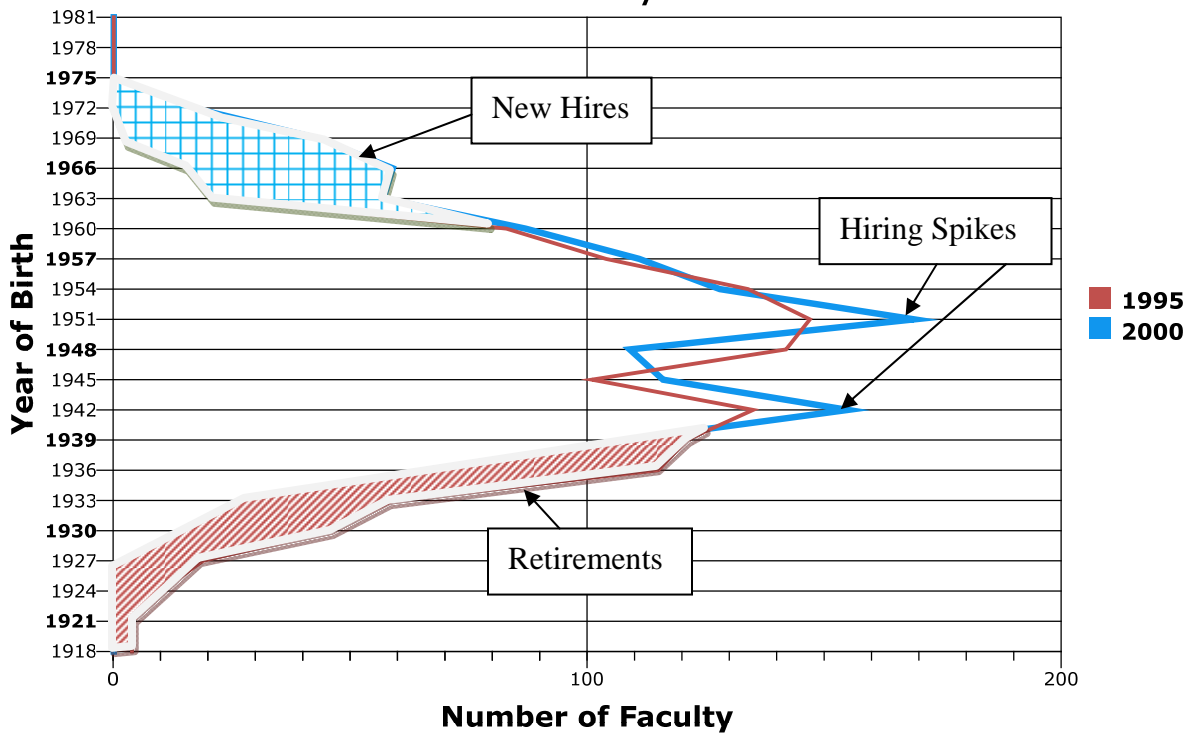


Figure 5. 1862 Tenure/Tenure Track Faculty in 2000 & 2008 By Birth Year

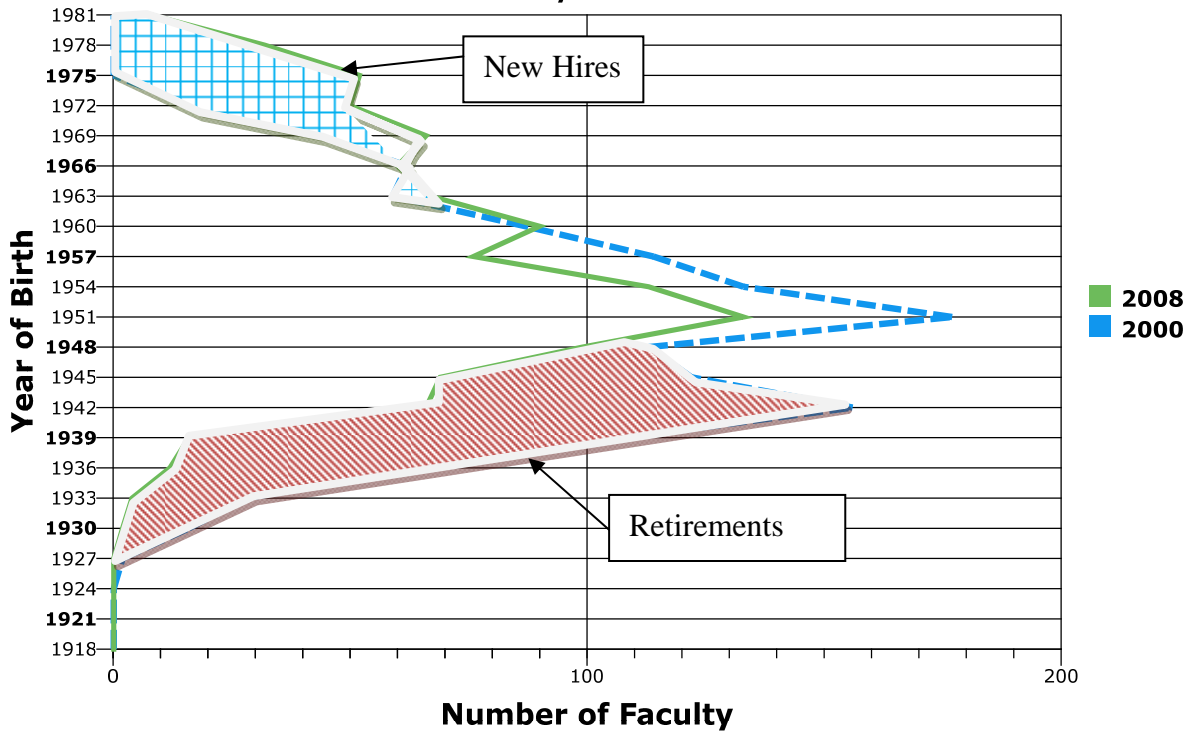


Table 9. AAEA Membership by Year and Region of the United States

Region	1995	2000	2008	Change 1995-2000	Change 2000-2008	Change 1995-2008	Agriculture Share of Regional GDP
Midwest	305	302	247	-1.0%	-18.2%	19.0%	1.9%
Northeast	127	126	84	-0.8%	-33.3%	33.9%	0.3%
Southern	267	280	225	+4.9%	-19.6%	16.7%	0.9%
Western	165	144	119	-12.7%	-17.4%	27.9%	1.5%

Table 10. Probit Results for AAEA Membership in 2009

Variable Name	Coefficient	Std. Error	Z Value
Constant	-18.6989***	6.81198	-2.74
Birth Year	0.009752***	0.00347	2.81
Gender	0.047176	0.09944	0.47
Highest Degree			
MS Degree	-1.11108***	0.162009	-6.86
MBA Degree	-1.08079***	0.408663	-2.64
JD Degree	-0.62262**	0.359504	-1.73
Appointment and Location			
1862 LGU Fixed On-Campus	-0.57671***	0.154583	-3.73
1862 LGU Off-Campus	-0.54603***	0.166078	-3.29
1890 LGU	-0.00712	0.226334	-0.03
Non-LGU	-0.58808***	0.159245	-3.69
Areas of Specialization			
Agribusiness	0.272053***	0.135613	2.01
Resource/Environmental	0.099546	0.117801	0.85
Farm Management	0.360316***	0.155421	2.66
International Trade	0.366846**	0.199421	1.84
Community Development	-0.211164	0.158382	-1.33
International Development	0.003569	0.194592	0.02
Marketing/Price Analysis	0.325960***	0.131890	2.47
Finance	0.802545***	0.304337	2.64
Production	0.489349***	0.192676	2.54
Agricultural Policy	0.467236***	0.185692	2.52
FTE Areas			
Administration	-0.042752	0.352838	-0.12
Teaching	-0.087466	0.310398	-0.28
Experiment Station	0.341878	0.286375	1.19
Extension	-0.054067	0.265257	-0.20
Service and Other	-0.158569	0.335168	-0.47
Region			
Western	-0.268364***	0.105769	-2.54
Southern	-0.244819***	0.091879	-2.66
Northeast	-0.560729***	0.118767	-4.72

\*\*\*Significant at the 99% confidence level

\*\*Significant at the 95% confidence level

\*Significant at the 90% confidence level