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The Present and Future Role of Teaching and Research In The College of Agriculture

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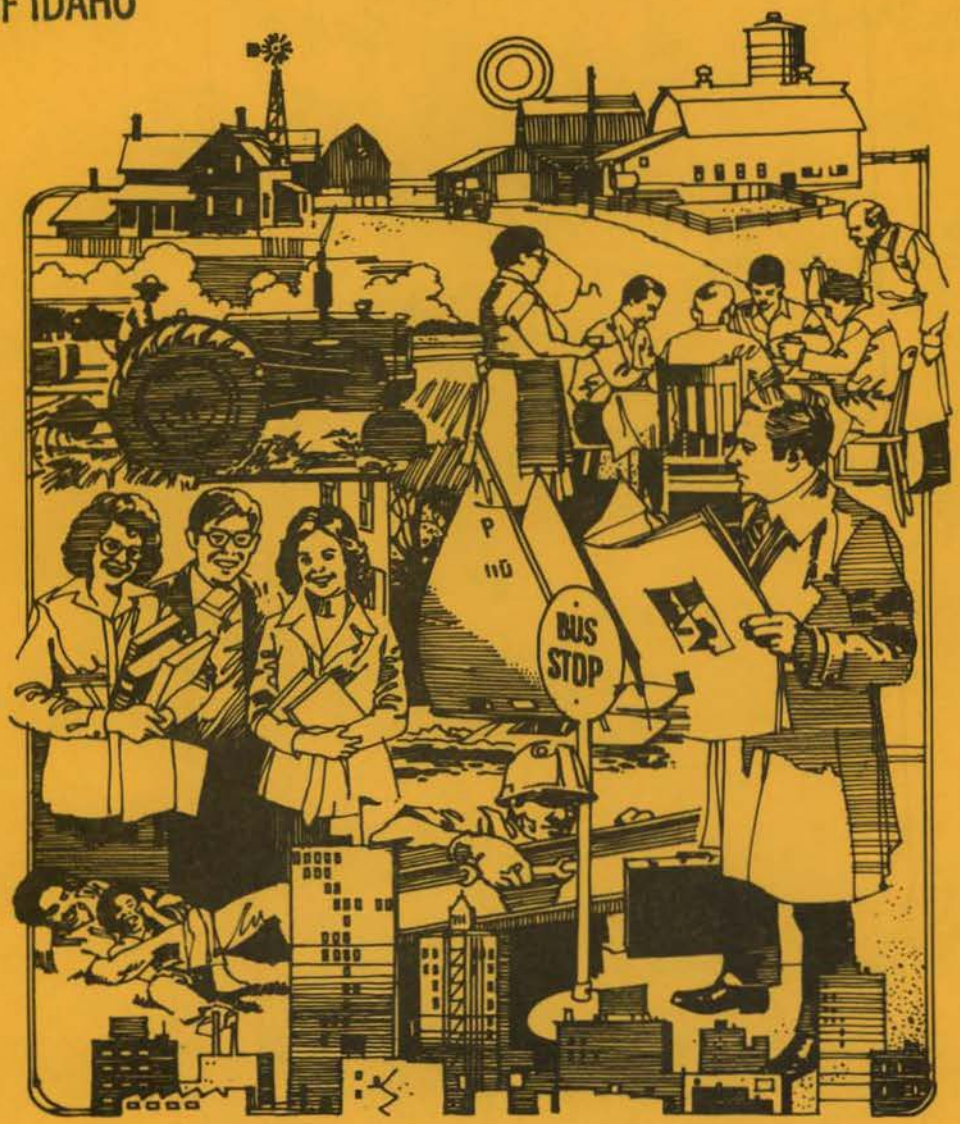

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The Present and Future Role of Teaching and Research In the College of Agriculture

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Summary

In 1983, the College of Agriculture was required to develop a 10 year plan in teaching and research in conjunction with a total University effort to set goals and objectives for the next decade. To solicit input for the 10 year plan, the College administration chose to expand the input process by surveying College of Agriculture faculty, boards of directors of organizations represented on the Agricultural Consulting Council and a random sample of state residents. This publication summarizes the survey information relevant to the current status and future direction of teaching and research in the College of Agriculture at the University of Idaho.

Results suggested a lack of understanding by the faculty on the relationship between increasing dependence on foreign markets and the development of international programs at the University. The population of Idaho has changed in composition over the past decade. If the College of Agriculture is to provide viable teaching and research programs, both on and off campus, it must adapt to the needs of Idaho's current and future residents.

Introduction

The University of Idaho College of Agriculture has suffered dramatic program reallocations since 1979. There is no doubt that these changes have had an effect on all programs of the College. In addition, inadequate budgets force decisions to eliminate entire programs and retain others or to reduce program quality. Both effects have occurred in the teaching and research functions of the College of Agriculture in its attempts to deal with budget limitations.

Teaching is central to any university system. Goals of the University of Idaho and the College of Agriculture are to provide students with a broad, liberal arts background and, at the same time, train them for occupations that serve our society. In its occupational training role, the College of Agriculture has the responsibility to maintain current and viable educational programs.

The occupational structure of our society is undergoing continual change. In agriculture, as in other industries, many jobs that were available 10 years ago are no longer available, and many available now did not exist 10 years ago. Jobs in agribusiness have changed from a primary emphasis on production to include areas such as commodity marketing, food processing, business management, consumer economics and sales. To continue viable training for jobs in these areas, agricultural colleges must be flexible in their development of teaching curricula. If not, students will enroll in other areas in the University to get relevant job training.

Just as with teaching, the role of agricultural research is significant in Idaho where the largest segment of its economy is related to agriculture. The direction of research must be consistent with ongoing changes in the state's agriculture. Ideally, the research programs of the College should be able to anticipate important agricultural problems in the state and direct research to solve these problems. In turn, the research information that is gained subsidizes and strengthens the teaching programs.

In 1983, the College was required to develop a 10 year plan in teaching and research in conjunction with a total University effort to set goals and objectives for the next decade. To solicit input for the 10 year plan, the College administration chose to expand the input process by surveying College of Agriculture faculty, boards of directors of organizations represented on the Agricultural Consulting Council and a random sample of state residents. This publication summarizes the survey information generated by these three groups relevant to the current status and future direction of teaching and research in the University of Idaho College of Agriculture.

The Surveys

Faculty

The survey of College of Agriculture faculty was designed to assess the current status, existing problems and the future of teaching and research within the College. A total of 240 questionnaires were mailed to the home addresses of all permanent College of Agriculture faculty. After three follow-up contacts, 230 usable responses were received for a return rate of 93 percent.

Agricultural Related Survey

A second survey was sent to members of the boards of directors of businesses and agencies represented on the Agricultural Consulting Council (an advisory council to the College of Agriculture, Appendix A). The survey's objective was to solicit attitudes related to agricultural policy and information useful in planning future directions for the College of Agriculture. The questionnaire was mailed to 494 people. Returns totaled 390 for a return rate of 80 percent.

Statewide Random Sample

The citizen survey used basically the same questionnaire as the agricultural related organization survey. It was sent to a randomly selected sample of 1,223 Idaho residents. After several follow-up mailings, 675 usable responses were obtained for a 55 percent return rate. The low return rate was not unexpected and was likely a result of both the questionnaire length and its complexity.

The agricultural related and statewide surveys can be compared directly since they contain the same questions. The faculty survey, however, contained a different set of questions. Results from all three surveys were used in this analysis where data allowed comparisons to be made.

Data from the statewide and agricultural related organization (ARO) samples were analyzed using multiple regression applied to a number of socioeconomic background characteristics. These variables included age, sex, location of childhood residence, present residence, length of time in Idaho, occupation (comparing farmers, with non-farmers), respondent's education and family income.

Sample Characteristics

Some definite differences are evident when comparing the ARO replies with the statewide sample of Idaho residents (Table 1). The ARO respondents were more agriculturally oriented than those in the statewide sample. More of the ARO sample grew up on farms (59 compared to 34 percent); more currently reside on farms (45 compared to 16 percent); and more were professionals, managers and farmers (85 compared to 32 percent) than the statewide sample).

The ARO sample lived in Idaho about 7 years longer than the statewide sample (37 compared to 30 years) and had slightly higher education and income levels. The median ages of the two samples were similar. The ARO sample had higher male representation than the statewide sample. The ARO sample represented the agricultural business interests of the state, while the statewide sample, even though it contained 11 percent farmers, was more representative of the non-agricultural segment of the population.

Table 1. Comparison of background characteristics of sample of boards of directors represented on Agricultural Consulting Council and the statewide population sample.

Demographics	ARO	Statewide sample
	(%)	(%)
Median age	45	44
Sex:		
Male	87	60
Female	13	40
	100	100
Childhood community:		
Rural farm	59	34
Rural non-farm or town under 10,000 population	30	20
City over 10,000 population	11	46
	100	100
Present community:		
Rural farm	45	16
Rural non-farm or town under 10,000 population	27	21
City over 10,000 population	28	63
	100	100
Median years in Idaho	37	30
Major occupations		
Professional	14	12
Managers	17	9
Farmers	54	11
Other	15	36
Craftsman, op. service	—	15
Clerical and sales	—	18
	100	101*
Median education	Some college	Some college
Median income	$25,000 to $49,999	$20,000 to $24,999

*Exceeds 100 because of rounding

Faculty Perspective

The faculty are directly involved in the teaching and research functions of the College. Therefore, faculty were asked to indicate the quality of several functional areas of the College.

Current Status of Teaching and Research

Among the areas of teaching, research and Extension the faculty ranked teaching first and research second (Table 2). All three areas were graded fair to good by a majority of the faculty.

In evaluating the quality of a number of College related areas, teaching ranked first and research ranked fourth out of 11 (Table 3). "Research" and "generating outside grants" were both ranked among the top five in terms of quality. Thus, while most of the faculty did not view any of the areas as being of excellent quality, research seemed to be viewed very favorably compared with other areas of the College. The quality of teaching in the College was given the highest ranking (Tables 2 and 3). In addition, the percent indicating that teaching quality was "good" to "excellent" was eight percentage points higher than for research quality (66 compared to 58 percent). It is evident that the faculty felt that the College was doing a good job in the teaching area.

Table 2. The quality of teaching, research and Extension in the College of Agriculture as ranked by the faculty.

	Quality of function								
	Poor		Fair		Good		Excellent		
Function area	N	%	N	%	N	%	N	%	Mean*
Teaching	4	2	58	32	107	59	12	7	2.701
Research	16	8	72	34	116	56	5	2	2.526
Extension	25	12	82	39	93	44	12	6	2.434

*The mean is based on a scale ranging from 1 to 4 with 4 being excellent quality.

Table 3. Quality ranking of activity area in the College of Agriculture by the faculty.

Activity area	Mean quality score*
Teaching	2.702
Cooperative programs with regional universities (WSU, OSU)	2.599
Generating outside grants	2.571
Research	2.526
Extension	2.434
Reaching appropriate clientele	2.411
Integration with total university	2.031
Cooperative programs with other colleges and universities in the state	1.926
Obtaining state funds	1.745
Communication between faculty and top level administrators	1.564
Faculty morale	1.420

*The scores range between 1 and 4 with 1 being poor quality, 2 fair quality, 3 good quality and 4 excellent quality.

Research and Teaching As Problem Areas

Faculty were asked to indicate the degree of seriousness of 19 possible problems facing the College of Agriculture (Table 4). Of three issues dealing with research, "recruiting qualified research faculty" was viewed as the most serious research issue and was ranked 10th. "Identification of research needs" and "quality of research" were ranked 13th and 18th, respectively. The problem of recruiting research faculty was no doubt viewed in relation to the general problem of adequate funding that was ranked as the second most serious problem facing the College. In general, the faculty did not regard research as being a serious problem in the College.

"Recruiting qualified teaching faculty" was ranked 14th out of 19 items and "quality of teaching" as a problem was ranked last. This is consistent with the high ranking of teaching quality in Tables 2 and 3. The

Table 4. Perceived seriousness of problems facing the College of Agriculture by faculty.

Issue	Mean seriousness score*
1. Faculty morale	3.527
2. Lack of adequate funding	3.467
3. Communications between faculty and top level administration	3.213
4. Morale support of top level College administrators	3.083
5. Lack of faculty involvement in decision-making	3.045
6. Lack of time available by immediate supervisors	2.910
7. Recruiting qualified administrators	2.848
8. Lack of positive image in state	2.847
9. Lack of direction for the College	2.671
10. Recruiting qualified research faculty	2.597
11. Meeting needs of client groups in the state	2.521
12. Recruiting qualified Extension faculty	2.520
13. Identification of research needs	2.454
14. Recruiting qualified teaching faculty	2.436
15. Quality of Extension work	2.298
16. Isolation of various College facilities	2.273
17. Quality of research	2.257
18. Dissemination of research results	2.190
19. Quality of teaching	1.944

*The scores range from 1 to 4 with 1 being no problem, 2 a slight problem, 3 a moderate problem and 4 a serious problem.

recruiting issue, while not as serious a problem as indicated for research and Extension, is no doubt related to the recent past budget problems of the College and the generally low salaries of faculty at the University of Idaho. Another possible explanation for these findings is that the teaching role may have less priority with the faculty than the research and Extension roles. Few Extension personnel, for example, have teaching appointments. Also, the research/teaching faculty may perceive that research receives the greatest weight in evaluation for promotion, tenure and salary determinations. As a result, teaching may not be viewed in the same light as other College activities. Decreases in teaching budgets may have less impact on faculty than decreases in research and Extension.

Goals and Support For Research and Teaching

One indication of support for a program is whether it should be a major goal and receive additional funding. The faculty may perceive teaching and research quality as good and not a major problem, but they may not see it as a priority area for the future.

College faculty distinguished between financial support for basic and applied research (Table 5). The faculty were definitely supportive of more allocations in the area of applied research primarily focusing on state needs. The four areas that rated highest for increased allocations all deal with applied research. Areas related to basic research and needs at the national and international levels received the lowest ranking for additional support.

With regard to teaching, on-campus and off-campus instruction were ranked fifth and seventh, respectively. However, some very distinct differences emerged when the rankings were evaluated on the basis of faculty appointment in teaching, research, Extension and administration. Faculty with a majority appointment in teaching ranked on-campus instruction the highest for future allocations and off-campus instruction sixth out of 12. Those with a majority of their appointment in administration ranked off-campus instruction highest and on-campus instruction sixth.

Communication between faculty and administration will be necessary if a strong emphasis is placed on off-campus instruction by administration in the future. A similar difference existed with regard to "development of international programs" with administration ranking it fifth and the teaching faculty ranking it ninth, Extension faculty ranking it 11th and research faculty ranking it 10th.

The clear priority among faculty for applied as opposed to basic research held true regardless of the amount of the faculty's time allocated to research, teaching, administration or Extension, or whether they are located on or off campus. When indicating how much priority should be given various areas in the College, "increase emphasis on research" ranked fourth out of 21 areas (Table 6). "Increase emphasis in applied research" ranked seventh whereas "increase emphasis on basic research" ranked 16th.

The teaching item ranked the highest was "increase emphasis on undergraduate teaching and curricula" that was ranked sixth out of 21 items. "Increase emphasis on graduate teaching and curricula" and "increase the number of students in the College" were ranked eighth and 10th, respectively. The lowest priority teaching item, "increase efforts in finding jobs for College graduates," was ranked 18th. Those with a majority of their time in teaching tended to rank these items higher than other faculty members.

Table 5. Future allocation of resources in the College of Agriculture as perceived by the faculty.

Area	Mean allocation score*
1. Applied research	2.514
2. Statewide needs	2.489
3. Production agriculture	2.404
4. Work with producers	2.367
5. On-campus instruction	2.199
6. Work with consumers	2.188
7. Off-campus instruction	2.182
8. Basic research	2.077
9. Postharvest technology	1.964
10. Genetic engineering	1.959
11. Development in international programs	1.751
12. National needs	1.647

*Scores range from 1 to 3 with 1 meaning less allocation, 2 the same allocation as now and 3 more allocation.

Statewide Perspective

Data from two surveys that solicited information from the agricultural segment of the state and a representative sample of residents were not identical to those generated by faculty of the College. Although additional and different information was sought from the ARO and statewide samples than from the faculty, some comparisons can be made.

Status of Current Programs

Residents of the state and those more directly related to agriculture were asked questions related to the perceived status of teaching and research in the College. One question asked respondents to rank four Col-

lege activities (Table 7). Research was given the highest priority more often by both the ARO and statewide samples. In fact, the statewide sample more often gave research higher priority than did the ARO sample. Undergraduate teaching was ranked second in priority by both samples. The ARO sample indicated stronger support for undergraduate teaching than the statewide sample. Graduate teaching was lowest in priority by both groups.

The statewide sample was more likely to indicate that agricultural research helps producers more than consumers (Table 8). The majority of both groups felt that research helps both consumers and producers the same. About a quarter felt that producers benefit more from agricultural research than consumers. In the statewide sample, more respondents with higher educational levels indicated that producers were helped more by agricultural research than consumers. There were no significant variations among background variables in the ARO sample.

When asked how important it was that agricultural research be carried out in the state, a majority of both samples indicated that it was very important. A larger majority of the ARO sample compared to the statewide sample felt research was "very important" (Table 9).

Table 6. Priorities in the College of Agriculture as perceived by the faculty.

Area	Mean priority score*
1. Provide more support for faculty in teaching, research and Extension	3.759
2. Increase emphasis on production efficiency rather than product maximization	3.547
3. Increase efforts in disseminating research results to clientele	3.511
4. Increase emphasis on research	3.412
5. Pay more attention to problems of producers	3.380
6. Increase emphasis on undergraduate teaching and curricula	3.363
7. Increase emphasis in applied research	3.333
8. Increase emphasis on graduate teaching and curricula	3.305
9. Increase emphasis on Extension	3.281
10. Increase the number of students in the college	3.281
11. Increase emphasis in Extension at county level	3.159
12. Pay more attention to needs of consumers	3.022
13. Increase emphasis on product utilization	3.018
14. Increase emphasis in electronic information delivery	3.013
15. Increase emphasis on commodity production	2.996
16. Increase emphasis in basic research	2.956
17. Increase emphasis on Extension at specialist level	2.904
18. Increase efforts in finding jobs for College graduates	2.832
19. Increase emphasis on endowments and chairs	2.619
20. Increase emphasis on vocational short course teaching and curricula	2.608
21. Increase emphasis on international programs	2.412

*Scores range from 1 to 4 with 4 being the highest priority.

Table 7. Importance of activities for the College of Agriculture as perceived by the statewide and ARO samples.

Activity	Percent indicating highest priority	
	Statewide sample	ARO
	(%)	(%)
Research	48	43
Undergraduate teaching	30	37
Off-campus Extension	18	18
Graduate teaching	4	2
Totals	100	100

Table 8. Primary clientele of agricultural research in Idaho for the ARO and statewide samples.

Clientele	Percent responding	
	Statewide sample	ARO
	(%)	(%)
Helps producers more than consumers	26	22
Helps producers and consumers the same	67	68
Helps consumers more than producers	7	10
Totals	100	100
	N =659	N =389

Table 9. Importance of agricultural research in Idaho as perceived by the statewide and ARO samples.

	Percent responding	
	Statewide sample	ARO
Very important	60	70
Somewhat important	34	26
Not too important	5	4
Not important at all	1	0
Totals	100	100
	N =662	N =390

When looking at the combined percentages for the "very important" and "somewhat important" categories, there was little difference between the ARO and statewide samples.

Respondents were asked to indicate how serious a problem a number of agricultural issues were to the state. Out of 12 items, the statement "university research programs not meeting needs of agriculture" was ranked seventh by the ARO sample and eighth by the statewide sample (Table 10). For the ARO sample, those who were younger and those who had been in Idaho a longer period of time were more likely to view "research not meeting needs" as a serious problem. For both the statewide sample and the ARO group, the statement "university teaching programs not meeting needs of agriculture" was ranked 11th out of 12 items. As with the faculty, it is clear that teaching was not considered a major problem by residents of the state.

Directions for the Future

Respondents were asked to indicate how much priority should be given in the future to various issues related to Idaho agriculture. "Increase agricultural research to make farms more productive or more efficient" was one of the 15 items in the list (Table 11) and was ranked sixth by the ARO sample and fourth by the statewide sample. In another comparison, 49 percent of the statewide sample compared to 42 percent of the ARO sample felt that "research to make farms more productive or efficient" should have high priority. Among the random sample of Idaho residents, those from rural areas gave the statement higher priority than those from urban areas.

Both the statewide sample and the ARO respondents were asked to indicate how much emphasis they would place on 19 specific research topics centering around "animals," "plants" and "natural and human resources." In response to this question, plant research had the highest priority for both groups (Table 12). The priority for plant research was much greater for the ARO sample than the statewide sample. The second most important area for the ARO group was animals followed by natural and human resources.

The areas of animals and natural and human resources were reversed for the statewide sample, and all three areas received more emphasis by the statewide sample than by the ARO sample.

Table 10. Seriousness of problem areas in agriculture in Idaho as perceived by statewide and ARO samples.

Problem area	Mean seriousness score*	
	Statewide sample	ARO
Prices farmers receive for their products	3.372	3.716
Exports for farm products	3.117	3.638
Federal government involvement in agriculture	3.332	3.413
Variations in prices farmers receive for their products	3.115	3.231
Erosion of soil from farmland	3.047	2.995
Farmers producing too much	2.465	2.944
University research programs not meeting the needs of agriculture	2.140	2.419
Development of new crop varieties and animal breeds	2.066	2.220
University Extension programs not meeting needs of client groups	2.000	2.212
Restrictions on development of more cropland	2.382	2.130
University teaching programs not meeting needs of agriculture	1.941	2.003
Quality of food consumed by Idaho residents	1.564	1.165

*Scores range from 1 to 4 with 4 being a serious problem.

Table 11. Priority areas related to Idaho agriculture as perceived by the statewide and ARO samples.

Area	Mean priority score*	
	Statewide sample	ARO
Develop foreign markets for Idaho farm products	1.548 (2)**	1.241 (1)
Protect the best producing land for crop production	1.531 (1)	1.567 (2)
Encourage farmers to adopt better conservation practices	1.595 (3)	1.679 (3)
Increase our markets through food processing	1.877 (8)	1.728 (4)
Improve the transfer of research results to farmers and consumers	1.908 (9)	1.753 (5)
Increase agricultural research to make farms more productive or more efficient	1.657 (4)	1.754 (6)
Improve agricultural education for youth (4-H, FFA, etc.)	1.801 (7)	1.791 (7)
Develop improved crop varieties and animal breeds	1.769 (5)	1.871 (8)
Improve transportation system for shipping agricultural products	1.924 (10)	1.887 (9)
Develop new chemicals for farming (fertilizers, pest and weed control)	2.188 (13)	1.915 (10)
Increase the use of forest and range land for grazing	2.413 (15)	2.272 (11)
Improve quality of life in rural areas	2.092 (11)	2.348 (12)
Improve food quality for consumers	1.773 (6)	2.369 (13)
Expand agricultural irrigation	2.161 (12)	2.494 (14)
Develop more land for agricultural production	2.393 (14)	2.710 (15)

*Scores range from 1 to 4 with 1 being high priority, 2 medium priority, 3 low priority and 4 not a priority.

**Item rankings are in parentheses.

Plants

The ARO sample placed more emphasis on disease/insect/weed control (5 percentage points) while the statewide sample placed more emphasis on "production methods and machinery" and "breeding and crop improvement." Among the ARO respondents, males placed higher emphasis on "breeding and crop improvement." In the statewide sample, those who grew up in rural areas placed higher emphasis on "soil fertility and fertilizer placement" and "disease/insect/weed control." It should also be noted that the ARO and statewide samples rated "disease/insect/weed control" as the highest and second highest preference among all three research categories. It was second highest in the statewide sample.

Natural and Human Resources

The greatest variation in preference between the ARO and statewide samples occurred among the items in this category (Table 14). Only one item relative to human and natural resources was given greater preference by the ARO sample, "marketing and market development." This item apparently had greater significance for the agricultural segment of the population.

Table 12. General preferences for research in the College of Agriculture through 1995 as perceived by the statewide sample and the ARO sample.

Programs	Average score for all items in each area*	
	Statewide sample	ARO
Plants	2.090	2.105
Animals	2.298	2.367
Natural and human resources	2.177	2.475

*The average scores were based on a scale ranging from 1 being "much more" emphasis to a 5 being "much less" emphasis.

Table 13. Preference for plant research in the College of Agriculture as perceived by the statewide and ARO sample.

Research area	Percent indicating some or much more emphasis	
	Statewide sample	ARO
	(%)	(%)
Disease/insect/weed control	79	84
Breeding and crop improvement	80	77
New and improved plant products	74	73
Soil fertility and fertilizer placement	73	73
Crop production and management systems	70	70
Production methods and machinery	63	59

In all other areas, there was substantially more preference given by the statewide respondents than the ARO group. In the statewide sample, the lower educational levels preferred greater emphasis on "community development," and rural residents were more likely to emphasize "farm and home management" than urban residents.

For the ARO sample, the soil conservation area was given greater emphasis by those who grew up in urban areas and those who currently lived in rural areas. Those who lived in rural areas gave greater emphasis to "water supply and quality." Those who grew up in urban areas and those with lower educational levels placed more emphasis on "fish, wildlife and native forests." Females placed more emphasis on "food and nutrition," and those with lower incomes placed more emphasis on "community development" (this was consistent with the statewide sample). Lower income respondents preferred "marketing and market development," and lower educational levels emphasized "farm and home financial management." It should be pointed out that the highest priority for the statewide sample in all three areas was "water supply and quality."

Animals

As in the other research areas, the statewide sample placed greater emphasis on items relative to animal research than did the ARO sample. The greatest difference was in the area of "production facilities" followed by "animal health" (Table 15). Very likely the higher preference for animal health among the statewide sample could be related to domestic pets rather than production animals. No variations in preferences by socioeconomic background occurred among the

Table 14. Preferences for natural and human resource research in the College of Agriculture as perceived by the statewide and ARO sample.

Research area	Percent indicating some or much more emphasis	
	Statewide sample	ARO
	(%)	(%)
Marketing and market development	71	80
Water supply and quality	81	67
Soil conservation techniques and systems	77	67
Farm and home financial management	64	57
Food and nutrition	65	47
Impacts of weather and climate	54	45
Fish, wildlife and native forests	67	34
Human development	57	34
Community development	52	26

statewide sample. In the ARO group, older persons were more likely to emphasize "livestock breeding and performance," and those with lower income had greater preference for "animal health."

Teaching

Emphases in the teaching area differed between the ARO sample and the statewide sample (Table 16). "Training in computer application for agriculture" and "marketing and market development" were the top emphases for the ARO group which placed more emphasis on both of these programs than did the statewide sample. In only one other program was this the case (attention to diversity and alternative agricultural systems). The greatest program emphasis by the statewide sample was in "practical learning experiences" followed by "training in computer application for agriculture" and "energy-alternatives/conservation." The statewide sample placed substantially more emphasis on items that dealt with human resources than did the ARO sample. In fact, the last three items — "housing and home improvement," "child and family development" and "clothing and textiles" — received twice the emphasis by the statewide sample compared to the ARO group. Perhaps the College should provide more teaching in housing, clothing and family subjects in the urban areas of the state. In the statewide sample, age influenced the responses to a number of programs. In all cases, the younger respondents placed greater emphasis on over a third of the programs (numbers 2, 3, 5, 11, 12, 14 and 18 in Table 16). Education also had significant influence. Respondents with less education placed greater preference on "pest management" and "child and family development."

A greater number of background variables influenced the preferences of the ARO respondents. Females placed greater emphasis on "off-campus instruction," "food and nutrition" and "clothing and textiles." Males tended to prefer "bio-technology" and "crop production." Those living in rural areas preferred "pest management" and "crop production," while those with lower educational levels placed higher emphasis on "energy-alternatives and conservation," "marketing and market development," "housing and home improvement," "clothing and textiles" and "child and family development." Younger respondents emphasized "marketing and market development," "farm business and financial management" and "attention to diversity and alternative agricultural systems." Finally, those who grew up in urban areas emphasized crop production" and "attention to diversity and alternative agricultural systems."

Another way to view the general emphasis on teaching, research and Extension in the College of Agriculture is to compare the overall averages of each program area. This was done for each area by totalling the average of each item in the plant, animal and natural and human resource areas and dividing the total by the number of items in all three areas (Table 17).

Table 15. Preference for animal research in the College of Agriculture as perceived by the statewide and ARO sample.

Research area	Percent indicating some or more emphasis	
	Statewide sample	ARO
	(%)	(%)
Animal health	77	73
Improved/new animal products	64	63
Livestock breeding and performance improvement	64	61
Production facilities (e.g. building, equipment)	47	34

Table 16. Teaching emphases in the College of Agriculture as perceived by the ARO and statewide samples.

Programs	Percent indicating some or more emphasis	
	Statewide sample	ARO
	(%)	(%)
1. Marketing and market development	70	81
2. Training in computer application for agriculture	77	85
3. Practical learning experiences	81	76
4. Farm business and financial management	70	68
5. Energy-alternatives/conservation	75	66
6. Attention to diversity and alternative agricultural systems	65	67
7. Animal health	66	63
8. Crop production	67	63
9. Pest management	64	62
10. Continuing education for self-improvement	71	57
11. Bio-technology	56	56
12. Livestock production	61	57
13. Natural resource conservation	73	52
14. Off-campus instruction for a college degree	59	51
15. Food and nutrition	62	35
16. Consumer economics	56	37
17. Housing and home improvement	51	22
18. Child and family development	58	29
19. Clothing and textiles	40	20

Using this procedure, teaching was ranked second by the ARO group and third by the statewide sample. It was also evident that all three areas were given higher preference by the statewide sample than by the ARO group.

Conclusions

There was strong support for agricultural research among both the College of Agriculture faculty and a representative sample of Idaho residents. Both groups were also consistent in their ranking of subjects and activities related to Idaho agriculture. "Development of foreign markets," "protection of the best producing land for crop production" and "encouraging farmers to adopt better conservation practices" were the top priority areas for both groups. This suggests that College programs in these areas will receive strong support from various Idaho clientele.

The nonagricultural segment of the population differed from the agricultural segment on several teaching and research preferences. The agricultural segment emphasized "plant disease/insect/weed control" and "marketing and market development." These areas are the center of the farm operation. The nonagricultural segment, on the other hand, emphasized "water supply" and "breeding and crop improvement."

Among the College faculty, the most significant finding was the strong emphasis on applied research related to local and regional issues as opposed to basic research and programs in the national and international arena. In an era when international programs are expanding within U.S. universities, there was little support for them among the College faculty. There is a need for faculty to better understand the relationship between international programs and Idaho agriculture. Problems such as limited domestic and foreign markets for the state's agricultural commodities are present. Idaho agriculture cannot afford to be isolated. It must view its potential markets as being worldwide and take its products to meet or create demands.

The primary teaching needs appear to be for programs in marketing and market development and in computer applications in agriculture. The nonagricultural sector of the state placed much more emphasis on teaching programs in human resources than did the agricultural sector. There was also some indication that the younger element and those with less education were not reached by the College teaching programs to the same extent as other segments of the population.

The population of Idaho has changed in composition over the past decade. If the College of Agriculture is to provide viable teaching and research programs, both on and off campus, it must adapt to the needs of Idaho's current and future residents.

Table 17. Comparison of the major functions of the College of Agriculture as perceived by the statewide and ARO sample.

Function	Overall average mean*	
	Statewide sample	ARO
Research	2.175 (1)	2.335 (1)
Teaching	2.342 (3)	2.437 (2)
Extension	2.271 (2)	2.552 (3)

*Based on scores ranging from 1 being "much more" emphasis to 5 being "much less" emphasis. The lower the mean, the higher the emphasis.

Appendix A

Groups represented in the ARO sample:

- United Dairymen of Idaho
- Idaho Association of Counties
- Idaho Onion Growers' Association
- Idaho Feed and Grain Association
- Idaho Bean Commission
- Idaho Women for Agriculture
- Idaho Farm Bureau Federation
- Idaho Wool Growers Association
- Idaho Horse and Pony Youth Activities Council
- Potato Growers of Idaho, Inc.
- Idaho Veterinary Medical Associations
- Idaho Poultry Industries Federation
- Idaho Pork Producers Association, Inc.
- Idaho Grower Shippers Association
- Idaho State Wheat Growers Association
- Idaho Cattlemen's Association
- Idaho Potato Commission
- Idaho Alfalfa Seed Commission
- Idaho Association of Pea and Lentil Producers, Inc.
- Idaho Pea and Lentil Commission
- Idaho Agricultural Chemical Association, Inc.
- Idaho Horse Council
- State 4-H Leader's Association
- Idaho Vocational Agriculture Teachers Association
- Idaho Extension Homemakers Council, Inc.
- Idaho/Eastern Oregon Seed Association
- Idaho Cooperative Council
- Idaho Feed and Grain Association
- Idaho Milk Processors Association
- Idaho Crop Improvement Association
- Idaho/Eastern Oregon Seed Association