Table 3. Percent Impact of a 10 Percent Change in Deflated Wyoming Net Farm/Ranch Income on Freshman Enrollment at Mean Values, 1970-1988.

	Percent Change in Freshmen Enrollments from a 10 Percent Change in:			
	Income Lagged 2 Years	3 Years	Lagged Moving 4 Years	Av. Income
College of Ag.	0.64	0.69	0.61	0.86
Agribusiness	—[a]	—	—	—
F&R Mgt.	1.38	2.50	3.22	2.61
Animal Sci	1.29	1.38	1.63	2.11
Range Mgt.	—	—	—	—

[a] Percent impact was not calculated in cases where the regression coefficient was not significantly different from zero at $\alpha = 0.10$.

been explicitly recognized. This information can be important in planning new programs and recruitment strategies in Colleges of Agriculture.

With respect to the analysis in this study, some caution needs to be exercised in drawing conclusions from the single variable analysis. Certainly, additional variables (other than income from agriculture) including employment potential after graduation, the amount of information available to the student at the time a decision is made regarding a major, the influence of parents and peers, etc. are important in the decision-making framework. In addition, the downward trend in income over the period of analysis in this study may be picking up the influence of other trend-related factors such as overall appeal of a particular subject area. An example of this might be biotechnology and the effects of interest in this topic on student enrollments in a biochemistry program. Nevertheless, it is reasonable to suggest, as supported by the results of this study, that income in production agriculture may be an important factor in deciding whether or not to attend college; and is almost certain to be an important factor in a student's choice of a particular major.

References

Purdy, Gene. Results of Department of Agricultural Economics Survey of Former Graduates, Unpublished Paper, Department of Agricultural Economics, University of Wyoming.

Wyoming Agricultural Statistics, Wyoming Department of Agriculture, Cheyenne. Selected Issues.

Faculty Development Needs in Colleges of Agriculture

Coby Bunch Simerly

This article presents the findings of a national survey which tapped the perceptions and views of agricultural faculty regarding their needs in five areas: (1) faculty development programs, (2) faculty responsibilities, (3) teaching, (4) faculty support, and (5) academic-private sector relationships. The study reveals that a majority of the faculty are interested in faculty development programs and in gaining new knowledge and skills which will enable them to be more effective in their teaching, research, and public service roles. The investigators recommend a number of steps for creating an environment which promotes and supports continued growth and development of agricultural faculty.

Through their educational and research programs, colleges of agriculture have strong traditional ties with food and fiber producers and agribusiness. Never before in our history have these relationships been more important. United States agriculture today faces the challenges of participating in a world-wide, competitive, high-technology food system. Significant scientific and technological advances enable us to make a major impact on world agriculture. Therefore, it is imperative that the educational and research programs in our colleges of agriculture stay at the forefront of this science and technology.

Faculty members are an essential resource component of the agricultural education system. Their teaching, research, and continuing education activities generate and transfer new technology, develop additional human resources, and thereby increase the value and human assets of U.S. agriculture. Faculty must be scientifically and technologically current, highly effective and productive, and innovative in their teaching and research if we are to remain competitive and continue our role as world leader in agriculture.

The need for greater attention to faculty development, renewal and redirection in teaching and research is clearly evident. Recognizing the significance of these issues to the future of agriculture, the United States Department of Agriculture Higher Education Programs made funds available for a comprehensive research project to investigate faculty development initiatives for instructional enhancements involving industry and education. As a result, a research

Simerly is associate dean for resident instruction and associate professor of Home Economics Education, University of Nebraska-Lincoln 68588. Co-investigators in the study were William L. George, associate dean for resident instruction, College of Agriculture, and Leszek Z. Chudzinski, research associate, both of the University of Illinois at Urbana-Champaign.

project was carried out to: (1) determine faculty perceptions of their needs for faculty development, (2) review existing faculty development programs at various institutions in the fields of agriculture, business, engineering, and the health sciences, and (3) develop a list of potential funding sources to support faculty development programs.

Methodology

Between October, 1985, and February, 1986, a national survey to determine faculty perceptions of their needs for faculty development was made of agricultural faculty in land grant institutions and in state colleges of agriculture and renewable resources. The survey questionnaire was developed jointly by the College of Agriculture and the Survey Research Laboratory, both at the University of Illinois at Urbana-Champaign. The sample was selected so as to yield 500 completed questionnaires and was divided between the state colleges and land- grant institutions so that the expected sampling variance of the two subsamples would be the same. The overall sample selected consisted of 540 faculty members from land grant institutions and 421 from state colleges. In all, 514 questionnaires were returned, a 62.5 percent return. Tabulation and analysis of the survey data were performed in the central computing facilities at the University of Illinois using the Statistical Package for the Social Sciences (SPSS), Version 8. Two reports entitled, *National Assessment of Faculty Development Needs in Colleges of Agriculture* (Chudzinski, et al.) and *Faculty Development Programs: A Literature Review* (Chudzinski, et al.) resulted from the study.

Description of Respondents

Of the 514 respondents, 54.3 percent were professors, 26.5 percent were associate professors, 12.8 percent were assistant professors, and 6 percent were instructors. Almost 11 percent of the faculty held administrative posts. Ninety-eight percent held Ph.D. degrees, 1 percent held M.S. degrees, and 8 percent held other degrees.

Findings

The national survey tapped the perceptions and views of agricultural faculty regarding their needs in five areas, (1) faculty development programs, (2) faculty responsibilities, (3) teaching, (4) faculty support, and (5) academic-private sector relationships. Following is a summary of the major findings in each of these areas of investigation.

Faculty Development Programs

The survey reveals that a majority of the faculty surveyed are interested in faculty development programs. They are particularly interested in exploring ways to avoid burnout and to improve morale; learning to communicate more effectively; developing creativity; learning about students' learning styles, characteristics, and needs; and in developing personal, organizational, management, and leadership skills.

Given adequate released time, most faculty are interested in revising instructional materials, developing new courses, redesigning courses, and developing research projects. There is high interest in establishing relationships with faculty in other universities and with business and industry. Many faculty are interested in broadening or increasing their areas of expertise by acquiring new specializations within their own fields or by developing expertise in another discipline.

The study reveals a number of factors which work against faculty development: (1) few faculty development programs are available, (2) there is low interest in improving instructional skills, (3) an inadequate number of exchange programs exist with government, business and industry, (4) most faculty believe financial help should be provided, (5) there is a perceived lack of time for faculty development, and (6) faculty are often unaware of opportunities that do exist.

Faculty Responsibilities

Teaching is the primary responsibility of the faculty surveyed: 93.6 percent have teaching, 65 percent have research, and 35.4 percent have service responsibilities. Assistant professors carry heavier teaching loads than associate and full professors. More assistant professors than associate or full professors teach 71 to 100 percent of the time: 36.4, 30.9, and 28.6, respectively. State college faculty have heavier teaching loads than land grant faculty. Class sizes tend to be small, 42.9 percent have 1-20 students, 62.7 percent have 1-30 students, 15 percent have over 50 students, and .4 percent have over 250 students.

Teaching

Faculty views regarding teaching are in unison with modern educational theory. Over 80 percent of the faculty regard all forms of teaching preparation as very helpful or helpful. Faculty believe that teaching and research should not be separated and that teaching and research should be similarly evaluated and counted equally toward promotion and tenure. Faculty who took teaching methods courses and did informal reading about various teaching methods felt better prepared to teach. Faculty whose teaching is subject to formal peer evaluation, who took teaching methods courses, who read about pedagogy, and who were formally prepared to teach feel that teaching is as important to them as research.

One-third of the faculty felt they were not prepared to teach by the time of their first appointment. Nearly half of the faculty consider teaching less important than research. The majority of faculty believe teaching is not adequately evaluated and rewarded. Faculty think departments rely too heavily on student evaluations at the expense of other forms of evaluation such as formal and informal peer evaluation and the evaluations of graduates. Financial and prestigious awards for outstanding teaching are viewed as valuable recognition tools but unsatisfactory as a means of evaluation. Finally, the study reveals that most faculty have had little preparation beyond experience as a teaching assistant for the role of college teacher.

Faculty Support

The majority of the faculty regard support conditions as important to their work and are very satisfied or satisfied with their secretarial assistance and with the availability of word processors and personal computers. However, many faculty lack other types of technical equipment and adequate space to perform their work. Sixty percent of the faculty are very dissatisfied or dissatisfied with the availability of gradu-

ate teaching and research assistants, support technicians, and departmental help in getting research grants. Assistant and associate professors have fewer graduate teaching and research assistants than full professors. More administrators than nonadministrative faculty are very satisfied or satisfied with the availability of support technicians, departmental help in getting research funds, and with the availability of other technical equipment. On the other hand administrators have less access to teaching and research assistants.

Over 86 percent of the faulty have some form of sabbatical leave. However, approximately 45 percent have no other form of released time to pursue professional development. Clearly stated requirements for tenure are considered very important by the majority of faculty. This is of particular concern to assistant professors.

Academia-Private Sector Relationships

The vast majority of faculty believe that: (1) collaboration with the private sector on a regular basis is important, (2) private industry is a notable source of funds and gifts to universities, (3) it is important for universities and industry to have a mutually beneficial research relationship, and (4) technical support provided by private industry is significant. At the same time nearly two-thirds of the faculty fear their loss of independence as scholars if they become involved with private business and industry.

Recommendations

Based on the findings of the study, the investigators recommend a number of steps for creating an environment which promotes and supports continued growth and development of agricultural faculty; an environment which emphasizes excellence in teaching; the acquisition of new skills in teaching, subject matter, research, and service; and developing mutually beneficial relationships with business, industry, and government. These major recommendations are to:

1. Reexamine college and departmental policies which faculty perceive to hinder their continued growth and development.
2. Assess the status of incoming and junior faculty for the purpose of developing policies and programs that facilitate their assimilation into the new environment and encourage them to address whatever professional, instructional, or personal needs they might have. Assign them teaching loads which makes it possible to have time to develop new skills in teaching and evaluation.
3. Develop processes and procedures to assist new faculty in their efforts to better understand and successfully fulfill their roles as teachers and researchers.
4. Require faculty to have teaching methods courses prior to their teaching appointment. These could be courses offered by colleges of education, or courses and workshops offered by university instructional resource centers or college of agriculture faculty development offices. It may be desirable to require teaching certification as has been done for public school teachers.
5. Develop an environment that encourages faculty to set and achieve new goals such as learning to utilize computer-aided instruction in the classroom, learning about the needs of business and industry, and gaining expertise in a new or supporting discipline.
6. Develop a sound financial base to support a faculty development program, and in conjunction with this make faculty development funds a permanent line item in the budget.
7. Establish mechanisms that will enable a faculty member to acquire expertise in a second discipline. A supportive atmosphere, released time, and some form of financial support are key factors in making this endeavor successful.
8. Develop faculty development programs that
   - ❶ are fully supported by the administration,
   - ❷ are preceded by an incubation period in order to generate faculty interest,
   - ❸ are developed locally to address the specific needs of individual faculty,
   - ❹ have input on curriculum and instruction matters from teaching/curriculum specialists,
   - ❺ offer financial benefits, however small, and provide some released time,
   - ❻ are evaluated for effectiveness in order to improve and assure future effectiveness, and
   - ❼ are voluntary and conducted in a supportive, nonthreatening atmosphere.
9. Plan for a more equitable distribution of teaching loads across ranks.
10. Reevaluate the role of faculty in state colleges of agriculture and renewable resources. Consider changing their faculty appointments to include time for research as well as teaching.
11. Assess the possible advantages and disadvantages of a contract vs. tenure system.
12. Departments and colleges should develop comprehensive college teacher preparation programs for graduate students who have college teaching and research as a career goal.
13. Graduate teaching assistants should be assisted and supervised by faculty members who are outstanding instructors so they can learn about good teaching from these individuals.
14. Evaluate teaching on a continuing basis using a combination of evaluation methods with special attention to peer evaluation.
15. Recognize that financial and prestigious awards for teaching are recognitions for outstanding teaching rather than methods for improving instruction.
16. Assess the needs of faculty for graduate teaching and research assistants, support technicians, secretarial assistance, personal computers, word processors, and other technical equipment. Providing the needed support and equipment should become a major priority.
17. Develop and establish more exchange programs between faculty and federal and state governments, private industry, and other colleges and universities.

(see SIMERLY on following page)