

IOWA STATE UNIVERSITY

COLLEGE OF AGRICULTURE

Mission-Oriented Research and the College Of Agriculture
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Several events in recent months have motivated a discussion of mission-oriented research within the College of Agriculture and the Iowa Agriculture and Home Economics Experiment Station. During President Geoffroy and Provost Allen's visit to the College last December, the Provost asked about the role pure discovery research had within the College. When department chairs reviewed the College's draft strategic plan, several recommended that specific mention be made of basic research in the biological and social sciences. Finally, the reorganization of the biological sciences has prompted questions about the roles for and expectations of College of Agriculture faculty in departments jointly administered with the College of Liberal Arts and Sciences.

In each case, I have responded with comments about the College's problem-solving mission within a land-grant university and the spectrum of research — from the most fundamental to the most applied — needed to succeed in solving the complex problems now confronting the State of Iowa, the nation and the world. As I've reflected on my responses, I've felt that further elaboration of my thoughts was needed and hence this paper.

What does the term "mission-oriented research" imply for the faculty, staff and students of Iowa State University's College of Agriculture? To answer this question, we need to consider what constitutes the mission and how we will pursue the mission. The land-grant mission is defined in terms of teaching, research and extension (or as the Kellogg Commission and the ISU Strategic Plan prefer: learning, discovery and engagement). In essence, the land-grant mission has been to provide educational

opportunities for the sons and daughters of working-class people and to provide knowledge to benefit individuals, communities and states (*Kellogg Commission on the Future of State and Land-Grant Universities, Renewing the Covenant*, pp. 4-5). Originally, the knowledge provision of the mission was accomplished by responding to society's needs through research and extension in agriculture, mining and engineering. Over their 140-year history, the land-grant universities expanded that mission to cover the full spectrum of knowledge.

A recent report of the Board on Agriculture of the National Academy of Sciences (*Committee on Opportunities in Agriculture, 2003, pp. 15-24*) concludes that changes in agriculture's social and scientific context require a new vision for agricultural research. The vision sees agricultural research as a positive economic, social and environmental force that is conducted with understanding and awareness of how problems and solutions are interconnected globally. It recognizes that agricultural production research focusing on productivity, efficiency and profitability should continue to meet the food and fiber needs of an expanding U.S. and global population. The vision encompasses equally important benefits accruing from agricultural research, such as enhanced public health, clean water, more diverse wildlife, rural amenities and social well-being. In essence, the new vision for agricultural research is proactive and anticipatory of the effects of new technologies and emerging socioeconomic structures on society, human health and the environment.

The College of Agriculture's new strategic plan agrees with the vision articulated by the Board on Agriculture. In many ways, the vision is the logical extension of the land-grant mission for contemporary colleges of agriculture. This vision for the agricultural research mission of the land-grant university also provides a clear direction for the discovery function inherent in the College's strategic plan.

Three implicit assumptions in the revitalized mission are reflected in the College's strategic plan: (1) conscious efforts must be made to focus resources and

expertise to bear on identified community, state, national and international problems; (2) the complex nature of the problems to be addressed requires a range of research approaches from fundamental to applied, encompassing multiple disciplines; and (3) the faculty, the College and the University are accountable to the public who are the source of funds supporting their research. With respect to the first assumption, the strategic plan identifies ten themes and key research needs within those themes. The plan recognizes that a range of research from the most basic to the most applied in a broad range of disciplines is needed to address these priority areas. Lastly, the plan also identifies indicators that will be used to assess and report our performance.

Several elements will be critical to our success in implementing the mission-oriented research essential to achieving the strategic plan's goals. First and foremost is the recognition that we need to increase our understanding of natural phenomena, and we need to provide practical benefits from that research. The benefits do not need to be immediately forthcoming, and in many cases it may be years before a practical application is made from a fundamental discovery. However, it is important for College of Agriculture faculty, staff and students to be able to articulate how their research relates to the strategic plan and to issues of contemporary society.

A second element critical to success is administrative and institutional support for mission-oriented research. The Experiment Station's program of work and the institutes and centers in which College faculty participate are ways in which the College and the University provide support and foster the interdisciplinary interactions important to mission-oriented research. The College's leadership will actively pursue opportunities for funding of mission-oriented research with state and federal government agencies, foundations, industry and private individuals while simultaneously encouraging the faculty's entrepreneurial efforts to obtain grants and contracts and to create business opportunities.

Adequate funding is the third element necessary for success. Here it is important to recognize that public funds have been declining for agricultural research, both at the federal and state levels. Particularly as the State of Iowa funding for the Experiment Station has decreased 23 percent over the last four years, it is all the more urgent that the College be able to clearly articulate our priorities and their relevance to the state's needs and that College faculty be able to provide evidence of the relevance of their research to the public. The broader mission discussed previously and articulated in the College's strategic plan offers new opportunities for research funding.

Collegiality and open communications are essential to the success of mission-oriented research across disciplinary lines. Different disciplines have different vocabularies, ways of communicating and expectations of what constitutes scholarship. These differences imply the need to reach common understandings and set clearly articulated expectations of roles and responsibilities when undertaking mission-oriented research.

Finally, recognition must be made of the contributions made by investigators in multidisciplinary teams engaged in mission-oriented research. The promotion and tenure document now in effect offers flexibility to provide such recognition. However, we will need to foster more discussion of how we will assure that appropriate recognition is made across the many departments in the College.

Research within the College of Agriculture and the Experiment Station is by its nature mission-oriented, although the nature of the mission has changed over the near century and a half of its history. The College has played a significant role in Iowa's economy and society, and through the application of science to the practical problems facing Iowa today, we will continue to be a vital and relevant force for positive change.

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