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Industry-Academic Partnerships The View from the Corner Office

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Abstract

Industry-academic partnerships are described and discussed from the perspective of industry. Eight types of partnerships are discussed, including internships, mentoring, site visits, faculty-directed research, student research, consulting, in-class visits, and industry advisory boards. The benefits, problems, costs, motivation to participate, and advice for managing industry-academic partnerships are presented.

Keywords: industry partnerships, industry collaboration, internship, mentor, field trip, consulting, advisory board

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Introduction

One of the distinguishing characteristics of most university agribusiness programs is the relationship they have with industry. As an applied discipline, there are many opportunities to interact with industry and many universities have engaged industry managers and executives¹ to enhance their programs and offerings. While agribusiness programs have long fostered relationships with industry, a recent review of food and agribusiness programs concluded that we need to strengthen these linkages if agribusiness programs are to remain relevant (NAMEFC, 2006).

The first paper to broach this subject in a comprehensive manner was written more than a decade ago. Litzenberg and Dunne (1996) wrote about forming partnerships between agribusiness programs and industry. They noted that internships and industry guest speakers were common ways in which agribusiness programs have worked with industry. Furthermore, they indicated that recent innovations in partnering with industry included executives-in-residence, mentorships, collaborative research projects, student-industry research projects, and advisory committees. In the intervening twelve years, many agribusiness programs have formed and matured. As a profession we have accumulated much experience in developing academic-industry partnerships. Many of the programs described by Litzenberg and Dunne (1996) as innovative are now mature and we have years of experience in managing, refining and evaluating them.

In a recent article, Baker et al. (2008) described the various means by which faculty members can partner with industry to conduct research, broaden the experience of their students, and provide opportunities to faculty members and their departments. Like many academic papers addressing academic programs, the perspective of this recent article is that of the faculty member. However, in the case of industry-academic partnerships the view from the corner office is significant and, we might add, quite different from that of the ivory tower. It is our belief that a thorough understanding of the benefits and costs of industry-academic partnerships *for industry managers* will make it easier for managers to undertake and manage partnerships with universities. For this reason, we adopt the perspective of the industry manager in this paper. Additionally, by understanding the industry experience, academic partners will find it easier to recruit and manage these partnerships themselves.

The primary objective of this paper is to explore industry-academic partnerships from the industry perspective. To this end we discuss the benefits, problems, and costs of several types of industry-academic partnerships as well as successful management practices utilized by industry managers and executives who have

¹ In the remainder of the paper, we use the term managers to include both managers and executives in order to avoid needless repetition of the term managers and executives.

participated in such partnerships. Finally, we develop a set of guidelines for managing each of the various types of partnerships.

This paper will be of interest to both industry managers and academics alike. Industry managers will learn what each type of partnership entails, how they and their companies can benefit, what the costs are, and how they can effectively manage the partnership. Conversely, faculty members will have a better understanding of what it means for an industry manager to embark on a partnership with an academic program. Understanding the industry viewpoint should help faculty members in developing and managing industry-academic partnerships and in recruiting industry partners who may be reluctant to participate.

We conducted research on eight types of industry-academic partnerships: internships, student mentoring, site visits, faculty-directed research, student research, consulting, in-class visits, and industry advisory boards. We did not include executives-in-residence in this research because we did not believe that agribusiness programs have sufficient experience with this type of partnering so that it could be adequately addressed. The primary source of information for this paper was a survey of industry managers, which the authors of this paper sent to their contacts in industry. The survey was administered via the World Wide Web through SurveyMonkey (SurveyMonkey.com). A total of 105 e-mail invitations to participate in the survey were sent out in mid-February. A single reminder to participate in the survey was sent approximately one-week later. A total of sixty-four responses were received for a response rate of 61%. The response rate was very high, although not unexpected, given the relationship between the survey administrators and the respondents.

The following description and discussion of the industry-academic partnerships is based on the results of the survey and the collective experience of the three authors. No claim is made as to the representativeness of the survey. The intent was solely to generate ideas and to more fully understand the industry perspective on managing relationships with university partners. The authors of this paper draw heavily on their many years of teaching, research, and outreach at both public and private universities, as well as their experience in working with and for industry.

Student Enrichment Programs

Internships

Utilizing students as company interns is possibly the most common means of cooperation between industry and academia. Wolf and Qenani-Petrela (2007) point out that integrating internships into the curriculum is increasingly important for agribusiness programs. They note that graduates of undergraduate programs who

have completed an internship “adjust faster on the job, need less on-the-job training and have a more open minded attitude.” They also note that a salary premium is associated with graduates who have completed a foreign internship. Although there is little written about internships at the graduate level, a survey of agribusiness Master’s programs indicated that only a few programs did required the completion of an internship as part of the degree (Boland, and Featherstone, 2007).

Many organizations offer internship programs on an annual or on-going basis. Internships may be conducted as part of a formal internship program coordinated by a school where the intern attends, by the organization employing the intern, or both. Occasionally, students will arrange for an internship on a one-time basis with an organization that has no formal program in their area of interest. The results of our industry survey indicated that internship programs are commonly employed, offer widespread benefits to employers and students alike, and do so at a modest cost to the company offering the internship. Of the sixty-four managers responding to this question, almost half (48 percent) indicated that they had directly participated in offering an internship to a university student.

Our experience with internships is that they generally result in a positive experience for the company, manager, and student. The results of the survey indicated that of the thirty-one managers who had experience with offering internships, thirty reported that the experience was a positive one (eighteen and twelve people reported very positive and somewhat positive experiences, respectively). Only one person reported that the experience was neutral and none of the respondents indicated that they had a negative experience. Furthermore, most managers who had worked with interns had done so multiple times. Fifteen of the respondents had employed interns two to three times and seven people had worked with interns ten or more times.

There are several benefits that accrue to the organization employing interns. First and foremost is the ability to recruit potential employees. Employers hope to get an early look at top students from the organization with which they have a relationship (NAMEFC, 2006). Some companies have established an ongoing internship program with a department, college, or university. The expectation is that the company will be rewarded by getting early access to the best students. If they are happy with their performance, they hope to have the inside track in hiring them upon graduation.

Many managers indicated that an internship program works especially well when the intern is assigned to a special project. Doing so ensures that the intern is assigned to a well-defined project. Such projects are often difficult to accomplish, given the day-to-day responsibilities of full-time employees. Interns are better able to focus on a special project that is their primary responsibility.

Another commonly mentioned benefit is that interns are able to provide a fresh perspective to business problems. They provide an outsider's viewpoint and they may be able to bring the latest analytical techniques, which they have learned in the classroom, to bear on a company's problems.

Internships are not without problems for the company and student. However, by far the most common response to the question regarding problems or difficulties encountered with the internship was that there were no problems. Those managers who indicated that they did experience problems indicated that the lack of a work ethic, the amount of the time required to train the intern, and the difficulty in coordinating the student's schedule with the company's needs were the most common difficulties encountered.

There are three major costs to companies hosting an internship, search costs, training and supervision costs, and direct monetary costs. Very few managers mentioned the time involved in identifying potential interns, reviewing applications, and interviewing candidates. Having a relationship with a university can significantly reduce the search costs because having a university partner who knows the company's needs can be of great assistance in identifying and screening quality candidates, and, in our experience, many companies rely heavily on their university partners to help manage the initial stages of recruiting an intern.

Interns in the food and agribusiness industry are typically paid an hourly wage or a stipend, as is common practice with most business internships. The great majority of respondents indicated that they paid interns an hourly wage of \$10 to \$15. A few companies paid more, \$16 to \$20 per hour, and very few companies offered unpaid internships.

The last major cost of hosting an internship is the time it takes to train and supervise the intern. Most companies will have an initial training to introduce the intern to the company, its policies, and its culture. This is often followed by training specific to the job the intern will be expected to perform. On an ongoing basis, most managers responding to our survey (60%) indicated that their interns required a few (one to three) hours per week of supervision. Twenty percent of managers indicated that their interns required four to five hours per week of supervision, while another 20% indicated that their interns were directly supervised for more than 5 hours per week.

Many factors motivated managers to offer internships. The most commonly mentioned reasons were an institutional affiliation, recruitment of top employees, generating positive exposure for the company, and the need to get project work done.

An effective internship program, from the perspective of the company host, should aim to provide positive exposure to the company and industry, make efficient use of the company's resources, and ensure that the intern is used productively. To this end, the following guidelines will help ensure a successful internship at a minimum cost of company resources:

- Partner with a university (department, college, or career services office). This will minimize the search costs to identifying and screening potential interns and provide access to the best candidates.
- Plan the intern's duties, training program, and job training in advance (Liztenberg and Dunne, 1996). It is helpful to both the intern and supervisor if the objectives of the internship are clear. In some cases interns have specific duties and perform functions that would otherwise be conducted by full- or part-time employees. In other instances, a major objective of the internship is to expose the intern to many departments within the company although this typically means that the intern does not spend enough time in any one department to become proficient at a job.
- An initial training period, usually lasting one to two days, is usually necessary to provide the necessary background to the intern and to train him or her in any specific job functions.
- Special projects are ideal for interns. They are typically well-defined and often suited to the two or three months that most interns spend at a company. Moreover, an intern may find it easier to complete a special project than a full-time employee who must continue to manage the day-to-day functions of his or her job.

Mentoring

Unlike internship programs, which are widely used in U.S. universities and especially common in agribusiness programs, mentor programs are relatively rare. Moreover, internships are typically conducted as part of a formal program sponsored by the university or company, whereas a mentor relationship is more likely to be developed at the initiative of the student outside of a formal program. In fact, we were only able to identify one formal mentor program, the Santa Clara University program offered by the Food and Agribusiness Institute for MBA students (Baker, 1998). In this section, we draw heavily on our experience with that program and the information provided by students and managers who have participated in the mentoring program.

A mentor program pairs a student with an industry mentor. Although there are no established norms, some key components of a mentor program include matching interested students with industry managers, facilitating initial and ongoing contact between the student and mentor, and having the industry manager mentor the student by providing career advice, an internship, or employment assistance (Baker, 1998).

Twelve out of the fifty-nine managers responding to this question (20 percent) indicated that they had experience mentoring students. All of the respondents reported having a positive experience, with seven managers reporting a very positive experience and five indicating the experience was somewhat positive. Furthermore, most of the managers have served in the capacity of mentor more than once. Four respondents had served as a mentor two to three times, two had served four to six times, and one manager had mentored seven to ten students.

The benefits to participating in a mentor program are not evenly distributed. It was clear that many managers who have mentored students felt that the students received more benefit from the relationship than they did. Why then do managers volunteer to mentor students and, in many cases, continue to do so? Some managers did believe that they, their company, or their industry directly benefited from the relationship. Several managers viewed mentoring as an opportunity to get to know top students and evaluate them as potential employees. Indeed, in several cases the student went on to become an employee of the company. Still other managers felt that it was important to try to help the student gain a positive view of the industry (whether or not they went on to work for the mentor's company). Most of the respondents indicated their motivation to mentor students was a way to "give back" and to help students or the university with which they had a relationship.

Our experience is that most people involved in either a formal or informal mentor arrangement have been satisfied with the results. Issues raised by participants in the survey included lack of time (on the part of the manager), scheduling conflicts, and the lack of initiative on the part of the student. The largest obstacle managers saw to a fulfilling mentor relationship for the student was that they had less time available than they would like to devote to the relationship.

The amount of time mentors devoted to working with their students varied greatly. However, in most cases, the mentors and students had contact ranging from once a month to once a week. The typical meeting lasted for about an hour. There were very few other costs involved in mentoring a student other than the manager's and student's time. Where travel was involved, it was usually the student who traveled to visit the mentor.

Our experience with both formal and informal mentoring arrangements and the comments of several managers who have served as mentors were utilized in developing the following guidelines for managing a mentor program:

- A formal mentor program sponsored by a university can be useful in providing the structure and oversight necessary for all parties to get the most out of the relationship.

- It is critical that there be clarity on the objectives, expectations, and commitment required of the mentor and student. Doing so can help avoid misunderstandings.
- It is especially important that the mentor be realistic about the time required to serve as a mentor and the time he or she can allocate to the student.
- An early contact between the mentor and student is important to get the relationship started.
- Regular meetings should be scheduled, whether it is once a week, month, or quarter.
- Incorporating a company visit or internship as a part of the mentor program will be perceived as an added bonus to the student.

Site Visits

It is common practice in many agribusiness programs to combine classroom instruction with practical experience. Many programs provide opportunities to visit firms in the food and agribusiness industry by arranging structured visits, often referred to as field trips. Such visits may be to a single company or part of a longer trip lasting as short as several hours or as long as a week or more. Most site visits start with an introduction to the company, its products, practices, and other pertinent information. Students usually enjoy observing a company's operations. A tour of the facilities and operations is not only an opportunity for learning but also serves to promote student interest. Throughout the visit, ample time is typically allotted for questions and discussion.

Managers' experiences with site visits were predominately positive. Of the fifty-nine managers responding to this question, twenty-six (44%) indicated that they had experience with hosting site visits to student groups. Fifteen of the twenty-six managers who had hosted site visits indicated that their experience was very positive and ten people indicated that it was somewhat positive. Only one person indicated that the experience was neutral. Another indication that managers enjoyed offering site visits to groups of students is that most managers had hosted site visits multiple times. Eleven of the respondents indicating they had hosted two to three field trips and seven managers indicating that they had hosted ten or more such visits.

The number of managers who reported that they and their firms benefited from site visits was surprising. Although our prior experience has been that most managers are willing to accommodate requests for visits, we believed that they did so out of a sense of commitment or loyalty to the university with which they have some kind of affiliation. However, all of the responding managers, with one exception, indicated that they benefited from hosting field trips. The two most commonly reported benefits were the opportunity to promote their company and industry and the

prospect of meeting potential future employees. Indeed one firm hired a student who had visited the firm on a field trip.

Promoting the company and industry is viewed as especially important to food and agribusiness firms. Many managers viewed site visits as an opportunity to explain what the company does and generate student interest in the company and industry. There is a perception that it is hard to keep the top students working in the food and agribusiness industry and that they may be lured away by higher salaries or more glamorous jobs in other industries. Managers viewed the site visits as a way to showcase the industry and promote industry opportunities directly to students.

A few managers indicated that they hosted site visits for other reasons, including the desire to receive feedback on the company and its business practices, to educate and learn from young, motivated people, and because of their relationship with a university.

Very few problems were noted as a result of hosting field trips. By far, the most common difficulty mentioned by managers was in scheduling a time convenient to both the host and visiting organizations. A few managers indicated that hosting a site visit could be time consuming and a distraction to running the business. Coordinating the visit of a large group of people and ensuring their safety was also mentioned by a few managers.

The cost of hosting a field trip was primarily the time required to meet with the student group. In many cases, the manager's time commitment is only the time spent meeting with students. Of course, this depends on the size of the group. For larger groups, it is often necessary to break into smaller groups and several people lead a tour of the operations and discussion. Most managers who responded to the survey indicated that two to four hours were required to conduct a site visit.

Some managers take field trips very seriously and spend a fair amount of time planning the event and coordinating activities. One manager indicated that to be successful they must spend time with advance planning and that they combine the visit with a project that the students work on in advance in preparation for the visit. The student group visits the company for three full days and on the final day the students present their findings to a group of senior managers.

Most company's out-of-pocket costs were minimal and limited to providing refreshments or promotional materials such as t-shirts or caps. In some cases, companies offered a lunch. These direct costs ranged from zero to less than a hundred dollars in most cases to several hundred dollars when a lunch was provided.

Much of the motivation to host a site visit is related to the previously mentioned benefits of hosting the visits, including the prospect of meeting potential employees and the opportunity to showcase the company and industry. Many managers also indicated that they were motivated by a desire to contribute to students' education and the relationship that they had with a professor or department.

Our experience with coordinating numerous site visits, hosting several visits, and the responses from managers indicate that the following guidelines will help ensure an educational and interesting visit with minimal use of company resources:

- A successful field trip requires advance planning.
- Have one person in charge for both the host and visiting organization.
- A detailed plan for the visit should be developed, including educational objectives, the people involved, topics to be covered, and a detailed agenda that indicates how time will be allocated between a tour, presentations, discussion, and other activities, such as refreshments or lunch.
- Mixing up activities such as a tour and presentations keeps the students engaged.
- Providing background information on the group and their interests will help the host develop an interesting and engaging program.
- Giving formal feedback to the host organization will make future visits more successful.
- Visitors typically enjoy receiving a "souvenir" from the organization, such as a t-shirt, cap, or mug.
- The hosts appreciate receiving a token of appreciation from the visiting group, such as a memento from the university.

Research

Faculty-directed Research

Faculty-directed research in partnership with industry is a natural association. In an applied field such as agribusiness, both partners have much to contribute. Industry partners may provide access to data, monetary support, equipment, and insight into the industry's problems. Faculty members offer the research tools and skills (Litzenberg and Dunne, 1996) to design research projects, collect and analyze the appropriate data, and interpret the results (Knight et al., 2006). Faculty members may also have access to qualified graduate or undergraduate students who can help carry out the research. Together, such partnerships often result in innovative research that addresses significant real-world problems.

Such partnerships may be formal or informal. In some cases, they may be facilitated by centers that receive industry funding to study specific industry issues. Alternatively, faculty members may develop relationships with companies or industry managers and negotiate for access to proprietary data or personnel that

would otherwise be unavailable to them. Another approach to conduct industry research is to work with industry groups that fund research, such as marketing orders², commissions, or trade associations.

An example of a successful industry-academic research partnership is the University of Florida's Center for Food Distribution and Retailing (CFDR). The center takes a multidisciplinary approach that involves faculty members from many departments and conducts research on topics of interest to companies in the food distribution and retailing sector. The center has received strong financial support from industry and generated research findings that have been both publishable and useful to firms in the industry.

The results of our industry survey indicated that faculty-directed research in cooperation with industry was one of the least common types of partnering with industry. Of the fifty-seven managers responding to this question, eight (14 percent) indicated that they had had been involved in joint university-industry research projects. This is consistent with our prior expectation and experience that many faculty members do not look to industry as a partner when conducting research. Although joint industry-academic research does not appear to be a widespread practice, those who have experience with it recognize the benefits and potentially low costs.

Managers responding to our survey indicated that their experience in cooperating with university researchers was almost exclusively positive. Seven of the eight managers indicated that the experience was positive, with three reporting a very positive and four reporting a somewhat positive experience. Only one manager indicated that he or she viewed the partnership as neutral. Many of the managers had multiple experiences in working with faculty members on research projects. Five of the eight managers had cooperated with university researchers on more than one occasion and two of them had been involved with more than ten research projects. This provides further evidence that from the industry perspective, joint industry-academic research projects are viewed positively.

Industry managers identified a variety of benefits from working with university researchers. The most common response was that working with faculty researchers gave the firm access to research and development support. Specifically, respondents felt that access to researchers who could properly design and execute research projects was a major benefit. One manager indicated that working with university researchers gave their company positive exposure. Surprisingly, publication of the results was a benefit mentioned by two of the respondents. One manager indicated that there was positive exposure that resulted from having the company name

² A marketing order is a mechanism for producers to conduct research, promotion, or advertising, among other things.

associated with a published study, while another indicated that publication lent credibility to the findings. Other benefits that were mentioned included, learning from the process, objectivity in collecting the data, and access to university equipment and personnel for future projects.

Although the majority of respondents did not identify any drawbacks, those that did pointed to university overhead charges that made the projects more expensive, the time involved to get results, and the conflict between keeping proprietary information private and the university's need to publish results. When asked to identify costs for these projects, the answers spanned a large range – from no extra cost to over \$100,000. Of course, the cost of the project varies greatly depending on the length and complexity of the project. In many cases the cost of the research would have been incurred irrespective of whether a faculty member was involved in the research.

The motivation to collaborate with university researchers was driven by the perceived benefits. For the most part, managers chose to partner with universities to gain access to the expertise of the university faculty, and state-of-the-art equipment, and because of the credibility associated with participation in a university study. One respondent indicated this was a good way to leverage already-stretched staff time to accomplish more projects.

We developed the following guidelines for conducting faculty-directed research with industry based on our experience working with industry on research projects and recommendations from managers:

- Faculty researchers and company personnel should work together closely to define a project that meets the company's need for research results within the company's budget.
- Which data and results will remain proprietary and which will be published should be agreed upon in advance.
- The contribution of each participant should be respected; faculty members will typically have the greatest expertise in experimental design and analytical techniques, while industry personnel will have a better understanding of what questions are most important to the company.
- The need for results in a timely manner is very important to industry.

Student Research

Students have many opportunities to work with industry on research projects. Such projects range from long-term, in-depth research, such as a Master's or Ph.D. thesis to short-term research, such as class projects. The research may be conducted individually or as part of a group of students and with or without the supervision of a faculty member. While the research project may be initiated by a company manager, it is most often the student or a faculty member who contacts the

company regarding a potential research project. In some cases, some or all of the cost of the research is borne by the company. This is often true when the company has a clear need and the research is undertaken specifically to address this need.

The results of our industry survey indicated that student-centered research was a fairly common practice. Of the fifty-seven managers responding to this question, seventeen (30 percent) indicated that they had had experience with student research projects. Reaction to these arrangements was generally positive, with the great majority of respondents indicating that they had a positive experience (seven managers rated their experience as very positive, while seven indicated it was somewhat positive). However, two managers rated the experience neutral and one manager said they had a somewhat negative experience. Most managers had been involved in relative few student-centered research projects, with all but one reporting they had been involved in three or less such partnerships (the final manager had worked with students on research project four to six times).

Industry managers identified a variety of benefits from working with students on research projects. The two most commonly identified benefits were generating goodwill or “giving back” to the university, and that the research that was conducted was useful to the company. Additionally, some managers found that working with students was a good way to gain exposure for their company with the students, while others believed that they gained a fresh perspective on issues.

Few drawbacks to working with students on research projects were identified, although some managers indicated that the time they committed and the time it took to complete the project were negatives. One respondent reported a negative experience where the students did not perform up to expectations, and another manager felt that they needed a better feedback mechanism at the end. One manager also noted that working with a student on a research project did not allow for the type of in-depth experience with the student that an internship did since the student was focused on school at the time they worked on the project.

The amount of time that managers reported spending on student research projects was generally low. It ranged from one hour to 40 hours over a semester or quarter. Additionally, most managers reported that there was no financial cost associated with the research projects, other than the investment of their time. The few managers who did incur expenses indicated that the cost ranged from hourly labor costs of \$12 to \$15 per hour to several thousand dollars. One manager reported they had worked on multiple student projects, ranging from no expense to funding a Masters’ thesis.

Nearly all managers indicated that their motivation for being involved in student-centered research was to “give back” to the university. This may have been a result of a personal connection with the student as an employee or family friend, or a tie to

a university they attended. Three managers indicated the student was a resource and able to conduct the work that was needed, and two indicated that it helped market the company (or the company's products) to the students.

The following guidelines provide direction for managers and faculty members in managing student research project in collaboration with an industry partner:

- It is important to ensure that there is a good match between the needs of the student or student groups and what the company can provide. Faculty members have a significant role to play in matching students to companies.
- Some initial planning is important to ensure that the student(s) and industry manager have clear expectations on what is expected of each party in terms of access to data, meetings, reporting, and any monetary compensation.
- When students are working on a project for a company it is important to understand the company's need for timely results. Students should be made aware of the commitment required to deliver a quality product in a timely fashion.
- Industry managers should have realistic expectations regarding what they will receive from a student project. The quality of the project will depend on many factors, including the length and depth of the project, the educational level of the students (undergraduate or graduate), and the quality of the students.
- For managers, this is an opportunity to invest time in developing the next generation of leaders.

Consulting

A third type of research partnership between academia and industry is consulting. Faculty members are often sought after by managers to provide their expertise to industry. For faculty members, consulting offers an opportunity to both supplement their faculty salary and gain industry experience (Batista, 2005). Of the fifty-seven managers responding to the questions regarding hiring faculty members as consultants, six managers (11 percent) indicated that they had done so. Half of the managers who had used faculty consultants had also worked with faculty members on joint research partnerships.

The experience managers had working with faculty consultants was exclusively positive. Seven of the eight managers indicated that their experience with hiring faculty consultants was very positive, while the remaining manager reported a somewhat positive experience. Most managers who had worked with faculty consultants had done so multiple times. Only two had worked with consultants one time, and the other six managers had hired faculty members as two to six times.

There are several benefits that accrue to the organization employing a faculty member as a consultant. The most common responses focused on the expertise or

research experience that the faculty member brought to the table. Other benefits were identified as aiding with strategic decision making, training employees, providing new ideas, and the ability to bring in qualified help quickly. One respondent also identified an indirect benefit of exposure to potential future employees through the faculty member as they discussed the firm in classes.

Only two of the eight managers who had employed faculty consultants identified any problems they encountered with the consulting experience. The drawbacks identified by managers were the time it took to get university approval for the consultant and management acceptance of the message delivered by the consultant. One manager indicated that faculty consultants don't charge enough!

Of course, length of the consulting arrangement and the costs associated with hiring faculty consultants spanned a wide range. The range of costs for the consulting contracts varied from a few thousand dollars to almost \$50,000, with most of the projects costing less than \$10,000. The time commitment required of the industry managers was reported as a few hours per week for most managers, although one manager indicated that he or she worked with the consultant for eight hours per week for the duration of the project. Most of the projects ranged from a few weeks to six months long.

Most industry managers indicated that they sought out faculty consultants with the expectation of receiving the benefits identified above. That is, they sought their expertise, specialized knowledge, or experience. One manager indicated they chose a university consultant because of the credibility associated by having a university faculty member affiliated with the project.

The following guidelines may be useful in managing a consulting arrangement between a company and university faculty member:

- Identify a faculty member with the proper expertise and experience.
- Be clear about expectations, including the scope and specific objectives of the project, and the role of each of the party to the agreement (project design, data collection and analysis, reporting).
- The parameters surrounding access to proprietary information should be discussed.
- Potential conflicts of interest, including the desire to publish on the part of the faculty member should be discussed up front.
- A firm estimate of the time needed to complete the project and monetary compensation should be made. A detailed contract will help avoid misunderstandings.
- For industry managers, timing is usually critical. It is especially important to ensure the timely delivery of results.
- Frequent contact between the industry manager and faculty member will help ensure that the project remains on track.

On-Campus Activities

In-class Visits

Classroom visits by industry managers (or similarly, visits to student organizations such as an Agribusiness Club) may be the least costly and most common interaction between industry and students. The use of guest speakers is common practice in academics, particularly in the professional schools.

Typically, the individual industry manager (or a team from a company) will travel to the university to meet with students in a classroom setting. Usually limited to approximately one-hour of contact time, the manager often shares his or her experiences, discusses the application of a particular tool or method, presents information about the industry or company, and, occasionally, offers information about job and internship opportunities with his or her company.

Students typically enjoy industry speakers, especially when the both the instructor and speaker have worked together to develop a presentation that complements the instructor's presentations. This involves some coordination on the part of the instructor and speaker to ensure that the speaker understands the instructor's expectations and is prepared to meet them. As with other forms of industry-academic interactions, arranging for guest speakers to visit the classroom is easier when a relationship exists between the prospective speaker and the faculty member or institution.

Over half of the managers responding to the survey indicated they had participated as a guest speaker in the past (54%). Twenty-one of the thirty-one managers who had served as a guest speaker indicated this was a very positive experience, and nine indicated it was somewhat positive. Only one manager felt the guest speaker experience was neutral and no managers indicated that their experience was negative. Most managers (twenty-six out of thirty-one) had been a guest speaker multiple times.

Managers identified many benefits from speaking to students. As expected, promoting the company to the students was the most frequently cited benefit, although the contribution to student learning was a close second. Other benefits identified by managers included learning about the students (who in some cases are an important customer segment or demographic), learning new ideas from listening to the questions they were asked, exposure to the opinions of future leaders, and the opportunity to interact with bright, young minds. Several managers indicated that they appreciated the opportunity to identify prospective employees. Another frequently identified benefit was the ability to teach the students about the industry, and to try to increase interest among the best students in pursuing a

career in the food and agricultural field. Others identified networking, providing students with real-world experiences, and simply having fun as benefits.

Only a few managers identified drawbacks of speaking to a class, with the most common being the time commitment. In addition to the time required for travel and making the presentation, finding the time to prepare the presentation was a significant part of their commitment. A few managers commented that they needed a greater lead time in order to have sufficient time to prepare their presentation. Other difficulties identified by managers included students sleeping or not paying attention during their talk, the need for a longer presentation (more than one hour) to really give the students value, and preparing an interesting presentation while preserving the confidentiality of sensitive information. One manager indicated it was hard to speak in front of so many students and another said that the biggest drawback is you leave the classroom feeling very old!

For industry managers, the time and expense of participating as a guest lecturer was minimal. Most indicated it took from a few hours to a day, including travel time, and that the only expense was travel and the time away from the office.

In general, the motivation for serving as a guest speaker was to “give back” to the university. Others mentioned the importance of building relationships, sharing experiences, promoting the company, scouting talent, and learning what students thought.

Managers who have taken the opportunity to be guest speakers offered many pieces of advice for an effective classroom presentation. We have added our own experiences in developing the following guidelines:

- The instructor and guest lecturer should discuss the classroom visit in advance (Litzenberg and Dunne). Specifically, it is important to agree on the objective of the class and what topics will be addressed by the guest.
- It is helpful for students to have a copy of the presentation ahead of time so that they may be prepared and develop relevant questions.
- Students generally find interactive presentations engaging and appreciate the opportunity to have their questions answered.
- Students enjoy presentations that incorporate examples and personal experiences.
- Instructors should provide guests with information on the students' backgrounds prior to the class meeting.
- Many guests use the opportunity to promote their industry and company to students and attempt to stimulate student interest in a career with their company or industry.

Industry Advisory Boards

Industry advisory boards are commonly used to link faculty members and departments with members of industry. Board members may include managers and executives who actively work in or are retired from industry. Industry advisory boards typically provide advice and assistance in areas where they are best suited to do so, including fundraising, providing jobs and internships, arranging site visits, serving as guest speakers, and advising on curricular matters (Baker et al., 2008). Twenty of the fifty-six managers who responded to the survey (36%) indicated that they had served on an industry advisory board. Most of those who had served had served for more than one year and many had served for four or more years. As with the other industry-academic interactions, respondents indicated that their experience was largely positive. Nearly half found this experience to be very positive (nine respondents), and most of the remainder found it to be somewhat positive (eight managers). Three managers indicated they were neutral as to whether serving on an advisory board was a positive or negative experience.

The benefits identified from participating on an advisory board varied, but the most common benefit (identified nine times) was that serving on the board was a way to network. Interestingly, most of the comments regarding networking referred to peer networks, not networking within the university. Three respondents indicated that the opportunity to “give back” to the institution from which they graduated was a benefit. Another three managers felt that serving on an advisory board was a learning experience. Several other benefits were mentioned by a few managers, including the ability to have input into the university programs that would educate future employees, exposure for the company with the university and students, and access to cutting edge research. Only one manager felt there had been no benefits from serving on the board, although this manager did rate the experience as very positive.

The time it takes to prepare, attend meetings, and travel to and from meetings was the primary difficulty identified to participation on an industry advisory board. Most managers indicated that they spent at least one day per year to participate on the board. The time commitment varied greatly and was dependent on the distance travelled, frequency of meetings, and the level of involvement with the board. Two drawbacks to serving on an advisory board were identified. One manager felt that they did not have the opportunity to provide much input, while another thought that there was a lack of continuity between meetings.

Most managers indicated that the direct cost to serving on an industry advisory was very little. In most cases the costs were limited to travel expenses. Several managers indicated that the only significant cost to them was the value of their time. Two members of an advisory board indicated that they spent between \$4,000

and \$6,000 per year and another two managers indicated that the cost of their contributions exceeded \$6,000 per year.

One might expect an industry advisory board to be a source of input for curriculum development, as the university is the training ground for their future employees. Additionally, many advisory board members are chosen because they are graduates from a department or college that is associated with the advisory board on which they serve. As such they have a unique and valuable perspective on curricular issues. However, only two managers indicated that providing any kind of input was a benefit of serving on the board, and two indicated that the lack of opportunity to provide input was a drawback of serving on the board. This may indicate that in some cases industry advisory boards are being used ineffectively or that some advisory board members are not be utilized to the full advantage of the institution that they advise.

In general, the motivation for serving on the advisory board was to “give back” or to provide input. Although making contacts or networking was the main benefit identified, it was less often cited as a motivation for joining the board, suggesting that this is an unanticipated benefit for those that serve.

We have developed the following guidelines for effectively managing an industry advisory board, drawing on the work by Baker et al. (2008):

- Be clear about the commitment expected of advisory board members, primarily in terms of time and money.
- The board should be organized into working groups or committees that match board members expertise with the needs of the university, college, or department. Areas of contribution include fundraising, curricular advice, providing jobs and internships, arranging site visits, and serving as guest speakers.
- Board meetings should run purposely (Litzenberg and Dunne, 1996) and efficiently and board members should be given ample opportunity to provide input.
- Exploiting the industry networks of board members can greatly expand the contribution an individual board member can make.

Concluding Remarks

In this paper, we have identified and discussed eight mechanisms for university faculty members in the field of food and agribusiness management to collaborate with industry managers and executives: internships, mentoring students, site visits to companies, faculty-directed research, student research, consulting, in-class visits, and advisory boards. We used a web-based survey to obtain the input of industry managers on their experience with such partnerships, including the benefits and drawbacks of these experiences, the costs of and motivation for partnering, and

their advice for managing the partnerships. For a brief summary of the various types of collaboration, the key benefits, potential problems, and the costs to industry of each type of partnership, the reader should refer to table 1.

Our experience in partnering with industry managers and the results of our survey lead us to believe that several types of cooperation between industry and academia are fairly common. Collaboration between industry and students through in-class visits (guest speaking), internship programs, site visits, student research, and industry advisory boards appears to be widely used as a means of exposing students to the practice of agribusiness management. Collaboration of faculty members with industry through mentoring students, faculty-directed research, and consulting appears to be less commonly practiced.

Student enrichment programs, including internships, mentoring, and site visits represent an important contribution to the education of students of agribusiness. This is especially important for an applied discipline where students may be expected to have some industry experience and where those students with such experience will have an advantage in the job market. Managers' experiences with student enrichment programs is usually positive, which may explain why most managers continue to participate in student enrichment programs once they become involved. The support for these programs was motivated by efforts to promote the company and recruit students, an institutional affiliation, and the desire to support the education of students.

Industry-academic collaboration on research tends to lag other forms of cooperation, although students frequently work with industry managers on research projects. Industry managers who have worked with faculty members on research projects (either faculty-directed research projects or consulting projects) indicated that the experience was favorable and that they benefited from the faculty member's expertise and the credibility associated with affiliation with a university. Joint industry-academic research, whether through faculty-directed research or industry consulting, would appear to be fruitful ground for greater industry-academic cooperation.

On-campus activities (in-class visits and industry participation on advisory boards) are used by many faculty members and departments as a means of partnering with industry managers. Both of these activities represent a good means of initiating contact with an industry manager, inviting them to campus, and opening the door to other forms of involvement. For graduates of a program, a return to campus as an industry expert is often an honor. For those with no affiliation with the university, an invitation to campus is a good step towards developing a relationship.

In this paper, we have explored many different forms of collaboration between faculty members and industry managers. Although faculty members may be

reluctant to ask members of industry to take on an additional responsibility and work with them or students, we were struck by the overwhelmingly positive experiences reported by members of industry in their various partnerships with the academic community. They were generally motivated to work with faculty members and most often felt that they and their companies benefited from the partnerships. We conclude by recommending that both industry and faculty members explore these partnering opportunities with each other for the benefit of both groups as well as students affiliated with the academic programs.

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Appendix

Table 1. Key Benefits, Drawbacks, and Costs to Industry by Type of Industry-Academic Partnership

Type of Relationship	Benefits to Industry	Potential Drawbacks for Industry	Costs to Industry (Time and Resources)
Internships	<ul style="list-style-type: none"> Ability to recruit potential employees Early access to top students Assistance with special projects Fresh perspective to business problems 	<ul style="list-style-type: none"> Problems were usually non-existent or minor Lack of student work ethic Training time required Coordinating with a student's schedule 	<ul style="list-style-type: none"> Search costs to identify qualified applicants Training and supervision costs Direct monetary costs (many paid \$10 to \$15/hour, some paid \$16 to \$20/hour)
Mentoring	<ul style="list-style-type: none"> Opportunity to meet top students Promote industry to students Way to "give back" to the university 	<ul style="list-style-type: none"> Many managers thought students received more benefit than the mentors Lack of time for proper mentoring Scheduling conflicts Lack of initiative from students 	<ul style="list-style-type: none"> Time allocated to mentoring (ranges from once a month to once a week)
Site Visits	<ul style="list-style-type: none"> Opportunity to promote the company Meeting potential future employees Receive student feedback on company and business practices Chance to educate and learn from young people 	<ul style="list-style-type: none"> Scheduling a convenient time for the business and faculty/students Time consuming activity Distraction to a running business Coordinating large groups Potential safety concerns 	<ul style="list-style-type: none"> Time required to plan and coordinate activities Out of pocket costs of refreshments and promotional materials (\$0 to \$500, in most cases)
Faculty-Directed Research	<ul style="list-style-type: none"> Access to R&D support Positive exposure for the firm Credibility associated with publication of results Learning from the research process Objectivity in collecting data Way to leverage limited firm resources 	<ul style="list-style-type: none"> University overhead charges increase costs Conflicts in dealing with proprietary information 	<ul style="list-style-type: none"> Ranges from \$0 to \$100,000 or more, depending on size, length, and complexity of research project

Table 1. Continued

Type of Relationship	Benefits to Industry	Potential Drawbacks for Industry	Costs to Industry (Time and Resources)
Student Research	<ul style="list-style-type: none"> • Firm goodwill/“giving back” • Research results are useful • Exposure to students • Gain fresh perspective 	<ul style="list-style-type: none"> • Time commitment can be significant • Long time frame to complete projects • Students may not perform to expectations • Need for proper feedback mechanisms for students and faculty advisors 	<ul style="list-style-type: none"> • Minimal (1-40 hrs over a term) • Time spent directing the student
Consulting	<ul style="list-style-type: none"> • Expertise or research experience of the faculty • Aiding in strategic decision making, training employees • Fresh ideas • Quality assistance can be brought in quickly • Exposure to potential future employees (faculty spreads the word to students) 	<ul style="list-style-type: none"> • Time it takes to get university approval for the faculty to consult • Management acceptance of the message delivered by the consultant 	<ul style="list-style-type: none"> • Time spent (1-8 hrs/wk over period of 1 week to 6 mos.) • Ranges from a few thousand dollars to tens of thousands of dollars depending on the project size, length, and complexity
In-Class Visits	<ul style="list-style-type: none"> • Promotion of firm and industry to students • Contribution to student learning • Learning about students • Learning new ideas from students • Exposure to opinions from future leaders • Teach students about the industry • Identify prospective employees 	<ul style="list-style-type: none"> • Time commitment (for travel and preparation) • Students not paying attention in class • Need for longer presentation time 	<ul style="list-style-type: none"> • Time and travel (few hours to a day)
Industry Advisory Boards	<ul style="list-style-type: none"> • Networking with fellow managers and executives • “Give back” to the university • Valuable learning experience • Provide input to university programs • Access to cutting edge research 	<ul style="list-style-type: none"> • Not enough opportunity to provide input 	<ul style="list-style-type: none"> • One to several days per year, depending on frequency of meetings • Minimal to less than ten thousand dollars per year

