



**Academy for Entrepreneurial Leadership
University of Illinois, Urbana-Champaign
Working Papers and Research Notes**

**ACADEMIC ENTREPRENEURSHIP:
POSSIBILITIES AND PITFALLS**

**An Integrated Summary of Studies Conducted by
the Academy for Entrepreneurial Leadership
University of Illinois at Urbana-Champaign**

**Anthony Mendes and Cynthia Kehoe
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Anthony Mendes and Cynthia Kehoe¹

Background

In 2003, the Ewing Marion Kauffman Foundation issued a request for proposals for a funding opportunity to support the development of cross-campus entrepreneurship education in American colleges and universities.² This was a new direction for entrepreneurship education in four-year colleges and universities. Other than such noted exceptions as Cornell and Iowa State Universities, entrepreneurship education, though growing, was still primarily available to engineering and business students.³ Some business schools had recently begun to create undergraduate entrepreneurship minors for non-business students, and individual faculty in other departments taught single courses related to entrepreneurship. Still, in the early part of this decade, while the majority of college graduates who started companies did not have business degrees, most students with ready access to entrepreneurship courses were majoring in business or engineering. The challenge from the Kauffman Foundation to grant applicants was to create new models for cross-campus entrepreneurship education. The eight recipients represented a diverse group of campuses, with different types of proposed programs.

The University of Illinois at Urbana-Champaign was one of the Kauffman Foundation award winners, with a proposal to work with faculty and graduate students as well as undergraduates. The proposal was created based in part on knowledge obtained from a 2002 inventory of the status of entrepreneurship education in over 3,100 two- and four-year U.S. colleges and universities. The study confirmed a weakness in the academic legitimacy of entrepreneurship.⁴ Among the problems identified in the study were: 1) lack of tenure track faculty to teach entrepreneurship courses; 2) exacerbation of this by the expansion of entrepreneurship across multiple disciplines; 3) lack of doctoral programs to educate and train the future professoriate; and 4) failure to support faculty research to develop the scholarly bibliography that would legitimize the field. These problems can be significant barriers to the promotion of cross-campus entrepreneurship.

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² Kauffman Campuses Initiative, <http://www.kauffman.org/items.cfm?itemID=475>

³ Inventory of Entrepreneurship Education in U.S. Two-Year and Four-Year Colleges and Universities. University of Illinois. 2002. Study conducted by Cynthia Kehoe and Paul Magelli, in collaboration with Illinois Business Consulting.

⁴ Inventory of Entrepreneurship Education in U.S. Two-Year and Four-Year Colleges and Universities.

In light of these barriers, Illinois wished to provide not only entrepreneurship *skills* to undergraduate and graduate students, but also to strengthen entrepreneurship research and teaching. Entrepreneurship education at Illinois was largely confined at that time to the College of Engineering, a few undergraduate business courses, and an occasional MBA course. Although the College of Engineering had a technology entrepreneurship center, the College of Business did not have an academic entrepreneurship center, though it did provide some small business consulting that involved students. The Kauffman-funded cross-campus initiative represented a new direction for the University of Illinois.

Established in 1867, the University of Illinois is a large, public, land grant institution. Its 43,000 students include 11,000 graduate and professional students, and with nearly 3,000 faculty, and 8,000 administrative and professional/support staff, the university is a large and complex organization. Research is a major focus, with over \$500 million in R&D expenditures yearly, ranking the University among the top twenty US research universities.

In an environment such as that found at Illinois, campus-wide entrepreneurship education cannot be imposed by the Academy for Entrepreneurial Leadership (the Academy). The campus culture, resource model and decision-making processes of the university do not allow any one academic unit such authority. Organizational theorist Karl Weick has characterized universities as loosely coupled systems – organizational elements are responsive, but retain some separateness and identity.⁵ Loose coupling results in modularity, variety, and some decision making autonomy and behavioral discretion. Such systems can be particularly adaptable and effective, especially when accompanied by shared values and a good leader. However, the internal fragmentation means that one strategy alone is unlikely to be effective in reaching the majority of people in the organization. An entrepreneurship program is not likely to have a highly authoritative position within the university, and must work through persuasion, cultivating champions in various units, and understanding the interests and concerns of various constituents.

Diagnosis to identify the heterogeneous needs, characteristics and expectations of the targeted “customers” was considered an important first step in creating an effective strategy for the Academy. It was an integral part of a ‘4-Ds’ approach adopted to identify, prioritize and implement initiatives of the Academy: (1) diagnose; (2) design; (3) deliver; and (4) determine.

Alignment of the Academy’s efforts with its environment would be the base from which the Academy could achieve its long-term goals. An informal information gathering process was part of the proposal preparation in 2003; this formal diagnostic effort was undertaken beginning in spring 2004. The diagnostic effort became the basis of the initial strategic plan of the Academy, and continues to inform Academy decisions.

⁵ Orton, J. Douglas and Karl E. Weick. Loosely coupled systems: A reconceptualization. *The Academy of Management Review*, 15(2), 203-223, 1990.

Undertaking this effort also had additional benefits: raising awareness of the grant and the initiative, and creating a discussion about entrepreneurship on campus. The diagnostic components included:

- Administrator stakeholder interviews
- Needs assessment survey of faculty
- Faculty career development study
- Graduate student survey
- Freshman survey
- Inventory of entrepreneurial interests, activities among faculty⁶

This publication focuses on the findings and over-arching implications of the diagnostic efforts. Our goal is to illustrate strategies for diagnosis of entrepreneurship interests, activities and concerns on university campuses, and to summarize some of our diagnostic results which may resonate with the environment on other campuses.

In part one, an integrated summary of the findings of three studies of faculty and administrators is presented. Part two provides the results of two surveys, one of graduate students and a second of freshmen. Part three discusses how the diagnostic activities influenced Academy strategies and programming.

Part One. Faculty and Administrators

Is the concept of “academic entrepreneurship” a contradiction in terms? Do university administrators and faculty hold different views on the role of entrepreneurial activities in a university? What are the characteristics that differentiate faculty who engage in entrepreneurial activities and more traditional faculty? How can faculty who are interested in entrepreneurial activities be supported by the University, and to what degree should they be? These are intriguing questions, which are stirring debate on campuses across the country, and the Academy set out to explore faculty and administrator opinion on the University of Illinois campus, through three studies.

To answer these and other questions associated with the diagnostic activities, and to provide objectivity, external validity, greater anonymity, and an environment that might encourage the participants to be more candid, an external research team was brought in.

Key Administrators

For the administrator interviews, 51 people were asked a set of open-ended questions. Interviews took about 45-60 minutes each. Participants included academic and administrative leaders -- college deans, representatives from research, economic development, technology transfer, public engagement, alumni affairs and development, the provost and chancellor. The Academy management team identified the stakeholders

⁶ Copies of the survey instruments are included in the appendices.

to be interviewed, and reviewed the interview guide. The external research team conducted the interviews, and analyzed the results, with input from the Academy leadership that might aid in interpretation based on knowledge of the University environment.

Most participants had some level of awareness of the new initiative, because of interactions during the proposal process. Among the objectives for the administrator interviews:

- Determine how the concept of entrepreneurship is defined and operationalized campus-wide
- Identify campus-wide entrepreneurial needs and opportunities, and desired Academy objectives
- Obtain candid opinions about the challenges the Academy faces
- Surface the success criteria by which key stakeholders will evaluate the Academy.

The interviews also aided in identifying Academy supporters, generating program ideas, and surfacing perceptions of the new initiative.

Among the questions asked in the semi-structured interviews:

- What is your definition of entrepreneurial thinking as it relates to the teaching, research, and professional development opportunities provided to faculty and graduate students by your unit?
- What are your goals for bringing entrepreneurial thinking to the university, or your area? What have you accomplished to date? What support (internal/external) have you had?
- What are the current entrepreneurial needs of the university, or your unit? What have been some of the obstacles? What do you need to meet your goals? What if any resources have been committed to reach these goals?
- What entrepreneurial activities and professional development offerings could be provided by the Academy in your department or area?
- What if any are some of the possible synergies you see between your department or area and the Academy?
- What in your view are some of the primary challenges you think will be faced by the Academy, and how can these be overcome?
- What would success for the Academy look like to you? What tangible outcomes would you like to see from the Academy: a) within 18 months; b) within 5 years; c) within 10 years?
- What ideas do you have to encourage entrepreneurial thinking by faculty as they approach their teaching, research or professional development?

The level of support expressed for the Academy and the cross-campus entrepreneurship initiative was very high among these administrators. They saw a potentially powerful, critical role for the Academy. Most expressed an interest in being involved with the Academy, and all wished to be kept informed of its progress.

The Academy was perceived as an entity that could assist the University in:

- Institutionalizing entrepreneurship
- Capitalizing on and changing the University's culture
- Crossing disciplinary boundaries
- Augmenting existing resources
- Responding to changing student interests
- Attracting and retaining faculty.

There was a general consensus that the activities of the Academy could be of benefit to all key constituent groups of a major university -- students, faculty, alumni, administrators, members of the community and governing bodies, as well as serve as a model for other colleges and universities. The advantage of this is positive, broad view is that there will be no shortage of opportunities. The disadvantage is that it will be extremely important for the Academy to determine (and communicate) its primary objectives - what it plans to accomplish and how its efforts can be assessed.

Entrepreneurship defined. The most common definition of entrepreneurship in an academic context that emerged was 'encouraging faculty, students, and administrators to work, act and think differently about opportunity recognition and identification of resources to pursue new ideas.' Sample definitions offered by the administrators were:

- Being innovative in the classroom
- Applying problem solving and creativity to all academic disciplines
- Being innovative in research; transferring intellectual capital into ideas and products that are either marketable or that can be applied in new settings
- Managing careers entrepreneurially
- Encouraging students, faculty, and administrators to work, act and think differently
- Creating value (e.g., new ideas or products).

These stakeholders viewed entrepreneurship in its broadest terms (i.e., encouraging innovative thinking and action). However, many said that a challenge for the Academy would be faculty who narrowly define entrepreneurship as for-profit activities and starting a new business. In effect, administrators considered that others on campus have an inappropriately narrow view of entrepreneurship, as contrasted with their own broader view of its value in multiple context -- that it can, e.g., encompass working and thinking more creatively as well as managing one's career more entrepreneurially. This suggests the importance of Academy communications (and that perceptions about others' understanding may not be accurate, given the widespread positive views found).

Challenges. Administrators noted a number of challenges the Academy will face:

- Changing the university culture
- Re-defining entrepreneurship and educating the audiences
- Measuring the Academy's progress in institutionalizing entrepreneurship across the campus

- Incorporating entrepreneurial activities into the faculty recruiting and reward systems
- Mobilizing resources and gaining campus-wide support
- Capturing the attention of faculty and gaining faculty buy-in
- Finding new funding sources; sustainability
- Working within a highly decentralized environment, in which decision-making and communication about academic opportunities are carried out largely at the departmental level
- Making a real impact will take time, and the Academy should devote the time necessary to building an appropriate infrastructure to support its broad mission.

These stakeholders also provided ideas about programming, other entrepreneurship activities for a range of audiences, suggested courses, and collaboration opportunities.

Impact assessment. Administrators noted that the Academy has an opportunity to think broadly about, and re-define, how success can be measured. Among the indicators proposed: meaningful success can be evidenced by faculty who feel more supported in their efforts to think outside the box; students in non-professional colleges who wish to incorporate entrepreneurial concepts in their coursework; and department heads who are willing to entertain non-traditional mechanisms for evaluating faculty for tenure and promotion. Additional success measures mentioned included:

- more class offerings with an entrepreneurial focus; more students who take entrepreneurship courses
- more collaboration amongst faculty on campus
- inclusion of entrepreneurial job strategies and development of self-management skills for all students
- gaining additional funding for Academy programs and activities
- attracting alumni to participate in cross-curriculum activities
- an increase in the depth and breadth of entrepreneurial activities that exist across the campus.

Additional strategies. Administrators provided a number of other strategic recommendations for the Academy:

- Academy messaging is critical
- Partner with colleges and departments with no prior entrepreneurial history
- Create and communicate a unique niche
- Start small and do it well
- Offer faculty incentives and rewards
- Avoid duplication of resources
- Customize content for the audience.

The Academy was seen as having the opportunity to function as a true cross-campus initiative, and to serve as a catalyst to encourage innovative, entrepreneurial activities.

The perception of the Academy as a potential catalyst continues – the Academy staff has been invited to participate in a range of activities, many sponsored by the Chancellor and Provost, including

- Presentation of entrepreneurship awards for faculty (for which we successfully sought the addition of an award for social entrepreneurship)
- Service on a committee to strengthen institutional entrepreneurship at the university
- Programming on entrepreneurial behavior in the university to several audiences, including Extension professionals and College of Business academic professionals
- Partnerships with Career Services units for programming
- Partnerships for grant proposals, co-sponsorship of events, and service on advisory groups.

Faculty Needs Assessment

An online needs assessment survey was sent to all full-time tenured and tenure-track University faculty in the late spring of 2004, with a follow-up printed version. A total of 542 responses was received, for a 27% response rate.⁷

As well as those objectives mentioned for the administrator interviews, the faculty survey had additional purposes:

- Determine faculty attitudes toward entrepreneurship
- Obtain examples of entrepreneurial activities, traditional and non-traditional, in which faculty are currently engaged
- Identify obstacles that faculty who wish to be more entrepreneurial currently face
- Identify ways in which the Academy can address the needs of faculty who wish to be more entrepreneurial.

Faculty were given a list of activities, and asked to identify which were most important, in their view, in describing entrepreneurial faculty. Among the activities considered most entrepreneurial (in unranked order):

- Seek funding
- Collaborate on research with colleagues outside the University of Illinois
- Manage one's career in a multi-faceted way
- Collaborate on research with colleagues at the University
- Incorporate creativity themes into teaching
- Conduct applied research.

The activities viewed as least important in describing entrepreneurial faculty were consulting for a fee, starting a business, and publishing a textbook – i.e., those seen as

⁷ The respondents represented a diverse group: 63% of respondents were male; 22% were minorities; 69% of all respondents were tenured. The disciplinary distribution was 31% in the Social Sciences; 23% Other Sciences; 18% in the Humanities; 17% in Engineering, and 8% in Health Sciences.

being more strongly of benefit to the individual rather than the organization. Definitions of entrepreneurship by faculty place a greater emphasis on process issues, such as collaborating with others, rather than tangible, economic forms of entrepreneurship such as consulting. Faculty members were open to a broad interpretation of entrepreneurship. This echoes the broad definition held by the administrators.

Faculty members were also asked about their own activities. A strong relationship was found between what people considered to be entrepreneurial and activities in which they engaged.

When asked about their perceptions of university culture, more than 70% responded that entrepreneurial activity should be rewarded. Over half of the faculty reported encountering barriers to being entrepreneurial. Conversely, almost half stated that the University promotes creativity. The words "Traditional" and "Bureaucratic" were the two most popular descriptors of the culture. Approximately one-third of respondents described the University as both; a third described it as one but not the other, and one-third described Illinois as neither. The 'traditional' description was not necessarily a negative one, nor necessarily a barrier to entrepreneurship. Rather, faculty showed appreciation for the university's traditions, and this should be taken into account in promoting an entrepreneurial outlook. For example, an emphasis on the University as an innovative environment can celebrate the university's scientific and academic achievements of the past.

More than half of all respondents reported encountering barriers to being more innovative, and often more than one barrier. Many of the reported problems are typical of large research universities. The most commonly reported barriers include:

- University bureaucracy
- Lack of resources
 - Predominantly economic
 - Peer support
 - Lack of opportunities to explore possibilities and/or to meet collaborators
- Reward/tenure system does not foster entrepreneurial behavior
- Viewed as counter to academic/discipline culture/norms
- Politics; disapproval of department chair or dean
- Not enough time/too many other activities/responsibilities.

Some findings represented immediate opportunities for the Academy, some suggested longer term opportunities, and other findings were primarily information to be shared with the university's faculty and administrators, since action must primarily be taken by others.

Feedback on potential Academy activities was sought. Faculty expressed an interest in career development programming for themselves and for their graduate students. Aiding students in their careers is one route to reaching faculty.

Implications of faculty perceptions. For some activities that the Academy might perceive as entrepreneurial behavior – e.g., managing one’s career in a self-directed fashion and incorporating themes of creativity, problem solving, etc. in teaching, faculty indicate that they are engaged in these activities but do not view them as particularly entrepreneurial. Faculty may be more “entrepreneurial” than they realize. The Academy must consider this, together with faculty definitions of entrepreneurship, in its communications, and use language that focuses on entrepreneurship as a means of improving the University (e.g. focus on collaborative research, idea generation, creativity in the classroom).

Entrepreneurship Inventory

Beginning in fall 2003, an inventory was undertaken of entrepreneurial interests and activities among faculty. Its purpose was, in part, to identify potential champions. This inventory has several components and is periodically updated. The course catalog and departmental course pages were examined, to identify courses that focus primarily on some form of entrepreneurship or small business management, or include this topic as one component in the course.⁸ Faculty inventors who work with the Office of Technology Management and/or faculty who have their own businesses were identified when possible. Also noted were scholars who have published on entrepreneurship-related topics.

Among the outcomes of this inventory: entrepreneurial activities were found to be higher than expected; seven colleges offered courses that focused primarily on entrepreneurship and small business management; 11 of the University’s 15 colleges offered courses that included entrepreneurship/small business management as a component; the Human Resource Education program had graduated more than 20 doctoral students with emphases in entrepreneurship education; more than 25 faculty and graduate students had published articles on entrepreneurship in the previous three years, representing 13 departments; the publications list served as a way to celebrate entrepreneurship on our Academy Web site; and the faculty identified became the initial membership of the Faculty Affiliates program.

Faculty Career Management

The third diagnostic tool was a career management study, conducted in spring 2004. This research was exploratory only; given its small sample size and research design, it was useful primarily in interpreting other results and suggesting further research.

The research method was semi-structured interviews; the sample was 32 successful/effective faculty, half entrepreneurial and half traditional, as identified primarily by deans. Entrepreneurial faculty were defined as those who bring innovative

⁸ This is not solely a matter of searching for key words, but requires some browsing of more likely types of courses – e.g., a practice management course in veterinary medicine.

approaches to their teaching, research and service, and/or go beyond research and teaching to incorporate other activities into their faculty role.

Half of the faculty were tenured, and half tenure track assistant professors. The group was also segmented equally into four disciplinary categories: arts and humanities; life sciences and veterinary medicine; physical sciences and engineering; and social and behavioral sciences.

Using content analysis on the recorded and transcribed interviews, a career management model was developed. The model includes two profiles: one of successful faculty based on characteristics possessed by *both* entrepreneurial and traditional faculty, and one of *entrepreneurial faculty only*.

Faculty perceptions. Both traditional and entrepreneurial faculty members were pleased with their professional experience at the University of Illinois. Faculty in areas other than Arts and Humanities generally felt that the university did a good job in providing resources for faculty development. Traditional faculty expressed interest in grant writing assistance and release time to seek funding. Entrepreneurial faculty requested research support, workshops on teaching, and both release time and assistance with start-up companies.

While a majority of entrepreneurial faculty viewed describing a faculty member as entrepreneurial positively, only a minority of traditional faculty did so. The discussion suggested that this was a problem with the term rather than the behavior – traditional faculty suggested that the term ‘innovative’ would probably be viewed more favorably by themselves and their departments.

When asked about the characteristics of successful Illinois faculty, the traditional faculty pointed to the need for faculty to be student-centered and enthusiastic about teaching. Entrepreneurial faculty, while not disagreeing with this belief, described a successful faculty member more broadly, citing the need to be engaged in numerous areas of academic life, teaching, research, service, and outside activities.

Participants were asked about the degree to which their involvement in non-traditional activities was supported by the University and/or their colleagues. Some examples of non-traditional activities by entrepreneurial faculty include starting or being involved in a start-up company, commercialization of research, teaching innovations, establishing an externally-funded research center, and consulting and executive education. The majority believed their involvement in these activities was supported by their colleagues. A minority believed that support by colleagues was inconsistent, or that department heads were supportive while departmental colleagues were less so.

Career management model. The content analysis of the interviews identified six key characteristics emulated by a majority of both traditional and entrepreneurial faculty, and a separate list of nine characteristics that distinguished entrepreneurial faculty. Although there is much overlap in the traits and behaviors of successful entrepreneurial and traditional faculty, those more entrepreneurial are particularly strong in initiating

new activities, building connections, and actively managing their careers in imaginative ways. The results are preliminary, but suggest further exploration, and a framework to use in talking with faculty.

Table I. Approach to Faculty Career

All Faculty	Entrepreneurial Faculty
<ul style="list-style-type: none"> • Collaborative • Motivated by curiosity • Organizational citizens • Dedicated to learning • Engaged in their work • Logical 	<ul style="list-style-type: none"> • Enthusiastic optimists • Initiators • Applied in orientation • Multi-experiencers • Creators/innovators • Non-traditional • Imaginative career managers • Connectors/builders • Strategic/visionary

Selected characteristics of successful entrepreneurial faculty. Certain characteristics were more strongly applicable to those faculty members identified as entrepreneurial:

Enthusiastic Optimists: While most faculty members, both traditional and entrepreneurial, were engaged in their work, entrepreneurial faculty exhibit an exuberance when discussing their careers. Similarly, entrepreneurial faculty members express great resilience when encountering career barriers and set-backs.

Initiators: Entrepreneurial faculty members are proactive in creating new research streams, forming professional collaborations with others, and inaugurating new programs and services.

Applied in Orientation: Entrepreneurial faculty members are interested in making an impact, seeing a direct or immediate application of their work. Entrepreneurial faculty members seek out real-world applications for their research.

Multi-Experiencers: Entrepreneurial faculty members have diverse work histories and link their previous experiences to current projects. They use this diversity of experience as a springboard for new classroom applications and research areas of focus.

Creators/Innovators: For entrepreneurial faculty, creativity is more than just being curious. These faculty members are highly creative, innovative, and seek non-routine approaches to their work. In particular, they are very creative in their approach to their research.

Non-Traditional: Entrepreneurial faculty members engage in activities that cannot be easily classified as teaching, research or service (such as an externally funded innovative research center, consulting, or a start-up company).

Connectors/Builders: Entrepreneurial faculty members do not define their interests in a narrow discipline-based manner. They are open to building on existing ideas as well as working with new people in disciplines other than their own.

Strategic/Visionary: Entrepreneurial faculty members see situations and problems holistically, as part of a coherent whole rather than disparate parts. They are also willing to focus on the larger objective and to cut their losses for the greater good or ultimate goal.

Implications of Initial Diagnostics

The three studies suggested strategies and activities for the Academy, and issues of which to be mindful. Among these:

Structure/Organization

- Develop a strategic plan, specifying the Academy's overall mission, and short-term, mid-term and long-term objectives.
- Determine desired outcomes and ways to measure/evaluate progress.

Communication/Decision-Making

- Develop protocols and procedures that are viewed as inclusive of groups across campus.
- Stay in close contact with career management study participants and other faculty and staff who have indicated their interest in the Academy.
- Plan carefully the Academy's brand, messaging, communication materials, and program offerings. Distinguish the Academy from other entrepreneurial efforts both on campus and nationally.
- Coordinate with existing efforts, centers, programs, and courses.

Academy Activities

- Incorporate the findings from assessment efforts into an activities plan. The plan can be matrixed to include a mix of activities by major function (teaching, research) and by constituent group.
- When possible, engage faculty from diverse departments in the activities of the Academy - as Fellows, proposal reviewers, program advisory group members, etc.
- Offer faculty fellowships for the explicit purpose of generating papers on academic entrepreneurship for acceptance by peer-reviewed academic journals.
- Develop a database of the interests and skills of faculty looking to engage in cross-disciplinary research.
- Offer the opportunity for faculty to work in a "thought incubator" setting.

- An important function of the Academy could be to simply bring together people and give them the opportunity to interact.
- Monitor perceived barriers to entrepreneurship at the University, and advocate for appropriate changes.

Program Design

- Expand the understanding and definition of academic entrepreneurship across campus by sponsoring programs with a strategically determined, eclectic array of departments and centers. Initially, involve colleges that have not developed entrepreneurial offerings.
- Announce campus-wide entrepreneurial faculty initiatives, and work with those most interested and engaged.
- Develop a portfolio-based approach to program design, offering an initial menu of programs and services that are tangible and that can yield short-term, measurable results, as well as activities whose impact will be evident over time.
- Work with the university's 27 career services offices on programs that can aid students in their professional career development.
- Offer faculty incentives including stipends, and/or small grants, to revise or design new courses.

Results of the administrator and faculty studies suggest that entrepreneurial thinking, no matter how broadly interpreted, will not be accepted by all faculty members. The Academy, however, was seen by administrators as having the potential to be a major source of support for those faculty members who are creative and innovative. These research findings affirm the Academy's need to define entrepreneurship in the context of higher education. By focusing on faculty and departments across campus; broadening the definition of entrepreneurship to include educational and non-commercial applications; and offering programs that foster entrepreneurial values in both academic and administrative areas, the Academy can help to shape the entrepreneurial university.

Part Two. Student-Focused Diagnostics⁹

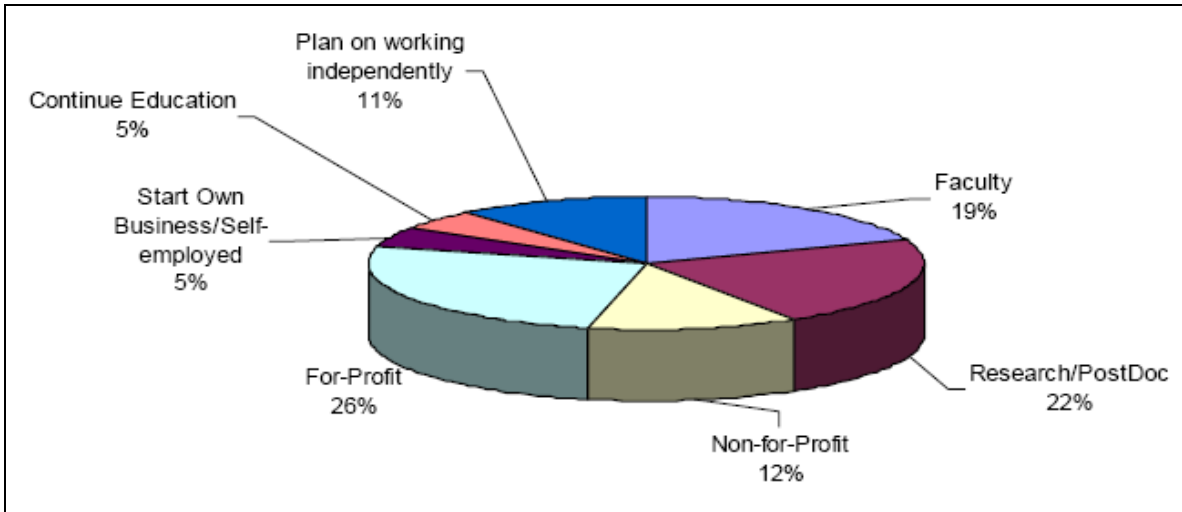
Graduate Students

A Web-based survey was distributed to all (10,237) graduate and professional students, with a response rate of 24.5%. The survey objectives were to ascertain graduate students' career paths, interest in entrepreneurship and preferred modes of learning about entrepreneurial skills. Interest in entrepreneurship was found to be high, and was not limited to such expected fields as business or engineering, but encompasses graduate students in all areas.

⁹ The surveys of graduate students and of freshmen were conducted by the Library Research Center, in the Graduate School of Library and Information Science at the University of Illinois.

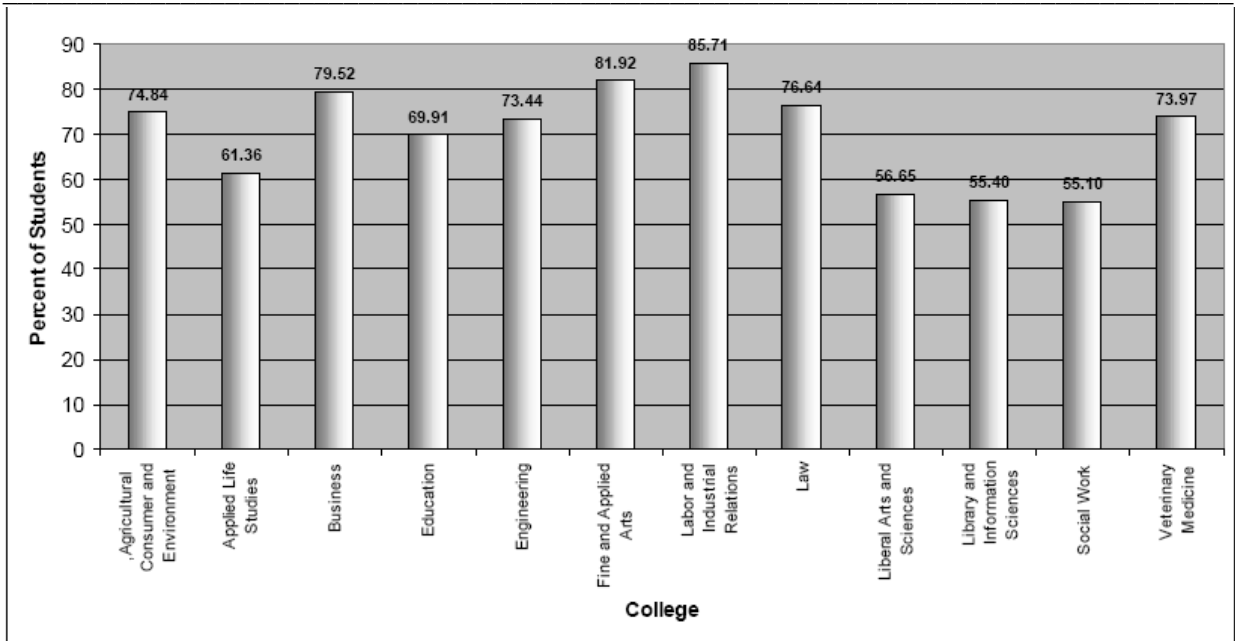
Students were asked 'What do you plan to do immediately after receiving your degree?' When combined, the options of starting a business/being self-employed and of working independently were chosen by 16% of all graduate students.

Diagram I. What do you plan on doing immediately after receiving your degree from UIUC?



Asked whether they ever planned on working independently as an artist/writer/inventor or starting their own businesses, 68% of the respondents planned to do so at some point in their careers. When examined by college, over 50% in each college said they had this goal. This is consistent with research that has found that most small business owners do not have a business degree.

Diagram II. Do you ever plan on working independently on starting your own business, at some point in your career?



Students were asked about their interest in entrepreneurship education, and the means by which they would like to learn more about entrepreneurship. This latter issue arose because of the concern that graduate students might find it difficult to add additional coursework, or substitute an entrepreneurship course for another elective.

Analysis does reveal significant differences in preferred learning modes, in relation to the colleges in which students are enrolled, and interest in particular forms of entrepreneurship, but across the campus there is a strong interest in learning more about entrepreneurship. Among the findings:

- Strongest preference overall, with 67% selecting, is for internships and mentoring
- Little interest in formal coursework
- Lack of knowledge about basics expressed: finance, finding markets, selling ideas/ inventions
- Uncertain about own abilities, and willingness to take risks.

Entrepreneurial topics that graduate students were most interested in included how to communicate ideas, how to organize resources, and how to recognize opportunities.

Graduate students preferred to learn through the type of instruction the Academy is most suited to provide directly: practical experience and workshops that are not constrained by the limits of formal instruction.

The interest in career development programming by graduate students dovetails with the need perceived by their faculty. It also meshes with campus and national concerns about graduate education, especially in the humanities and social sciences, which is often devoid of any discussion of careers other than as faculty.¹⁰

Freshman Survey

In fall 2005, a survey was administered to all first semester freshmen. The respondents (29.47% of the population of 4,747 students) were a good representation, by gender and college, of the freshman class as a whole. The purpose of the survey was to assess entrepreneurial inclinations and attitudes. Students were asked about their past, current and prospective plans for owning their own business or working for social change. The latter option was used to indicate potential interest in social entrepreneurship, a term with which students were less likely to be familiar. The freshmen were also asked about taking entrepreneurship-related courses as undergraduates.

Among the overall findings: Almost one in ten (9.5%) Illinois freshmen have owned their own businesses or worked as a creative artist or inventor. More than one in ten (11.1%) plan to own their own business or work independently while undergraduates. The college in which a student is enrolled is highly correlated with such post-graduate plans. Students in Fine Arts, Engineering and Business were most likely to indicate interest in owning their own business or working independently as a creative artist or inventor after graduation. Students in Education were least likely to express interest in such careers.

Social change/social entrepreneurship. Students were asked about their interest and involvement in working for social change. Somewhat less than half (43.0%) of freshmen had already been involved with an organization whose purpose is to bring about social change. Almost two in three (61.2%) freshmen expected to be involved in an organization while they were earning their undergraduate degree. When they graduated, 64.4% expected to work to bring about social change within an organization.

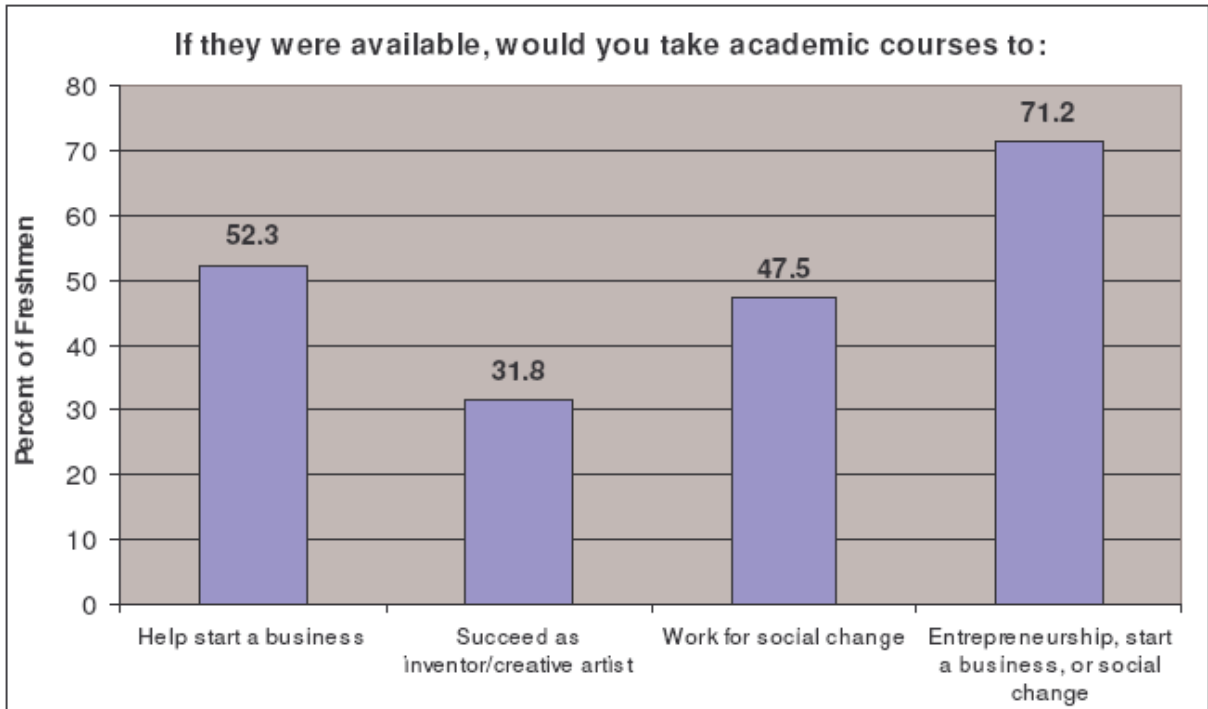
Undergraduate entrepreneurship education. Freshmen were asked whether they would take courses to help them to start a business, succeed as an independent inventor/creative artist, and/or work for social change. Overall, 71.2% of respondents indicated they would take such courses if available. Such interest was spread across the disciplines.

- More than half (52.3%) of Illinois freshmen were interested in learning how to start their own business
- Almost one in three (31.8%) were interested in learning how to succeed as an independent inventor or creative artist
- Almost half (47.5%) were interested in learning about how to work effectively for social change

¹⁰ The Responsive Ph.D. Woodrow Wilson Foundation.
<http://www.woodrow.org/responsivephd/index.php>

- Men were more interested than women in start-up businesses (53.7% of male freshmen were interested in starting their own business after graduation, compared to 32% of women)
- Women were more interested than men in social entrepreneurship
 - 55.9% of women *vs.* 37.2% of men were interested in taking courses on working effectively toward social change.

Diagram III. Freshman Interest in Entrepreneurship Courses



Implications of Faculty, Administrator and Student Diagnostics

What did the Academy for Entrepreneurial Leadership learn from undertaking these diagnostic efforts?

The diagnostic process itself is valuable. It brought to the surface perceptions and opinions, and served to gather significant information, but also served as a messaging tool about the entrepreneurship initiative. Results were more positive than perhaps expected, in the level of entrepreneurial activity and interest among all groups. Sharing the results with stakeholders, through meetings and documents, led to further discussion and input.

We began with a broad definition of entrepreneurship. This allowed faculty who would not ordinarily identify as entrepreneurs to see a place for themselves. One example: a dance professor interviewed for the faculty career management study later became a

panelist for a presentation on entrepreneurial faculty. She noted that she had not previously used the term entrepreneurial to describe herself, but rather had thought of herself as 'scrappy,' as aggressively managing her career and looking for opportunities. This attitude and career strategy was one she was trying to impart to her students, and she could now see the role that education related to entrepreneurship might strengthen those efforts.

We learned that terminology matters. 'Entrepreneurial,' for example, is less problematic than entrepreneurship. It allows people to see it as behavior, or a process, which may be useful in multiple contexts. Innovation and creativity are also often useful as terms to accompany entrepreneurship as part of the explanation of its broad perspective.

Social entrepreneurship was included as one form of entrepreneurship in the diagnostic studies. It was found to be of interest to both faculty and students – in fact, to a greater extent than the Academy staff might have predicted -- and interest continues to grow. Its inclusion in the Academy's mission allows us to work with faculty and administrators interested in civic engagement, service learning and outreach. It will be a track in the undergraduate minor under development. Social entrepreneurship has, in fact, become a signature component of the Academy.

The diagnostic process began the Academy's networking activities. Discussions with stakeholders identified champions. The inventory of entrepreneurial activities led to the establishment of a Faculty Affiliates initiative. The wide interest in entrepreneurship, broadly defined, also led to a cross-campus advisory board of deans; establishment of an Opportunity Fund to support ideas that do not fit within our funding frameworks; co-sponsor of events and seeking partnership opportunities, based initially on suggestions that arose through the diagnostic process; and opting not to control the curriculum. Faculty Fellows are encouraged to develop their own courses, tailored to their areas.

Part Three. Academy Strategy

In the previous sections on diagnostics, we noted that campus-wide entrepreneurship education, and a change in organizational culture to create a stronger appreciation for entrepreneurial behavior cannot be imposed by the Academy for Entrepreneurial Leadership. The campus is large and complex – as Weick describes, a loosely coupled system. Diagnosis to identify the heterogeneous needs, characteristics and expectations of the targeted "customers" is a necessary first step in working toward Academy goals. To effectively accomplish the succeeding steps, the Academy adopted a '4-D' framework for transforming the entrepreneurship orientation of the University of Illinois campus: Diagnose, Design, Deliver and Determine. These components are closely linked in a dynamic process, and used to achieve both strategic consistency and appropriate changes in responses to the environment.

Before the Academy was established, entrepreneurship endeavors at Illinois were rather traditional, in that the business and engineering schools were the primary homes of entrepreneurship curriculum and organizations. These efforts, though influential within

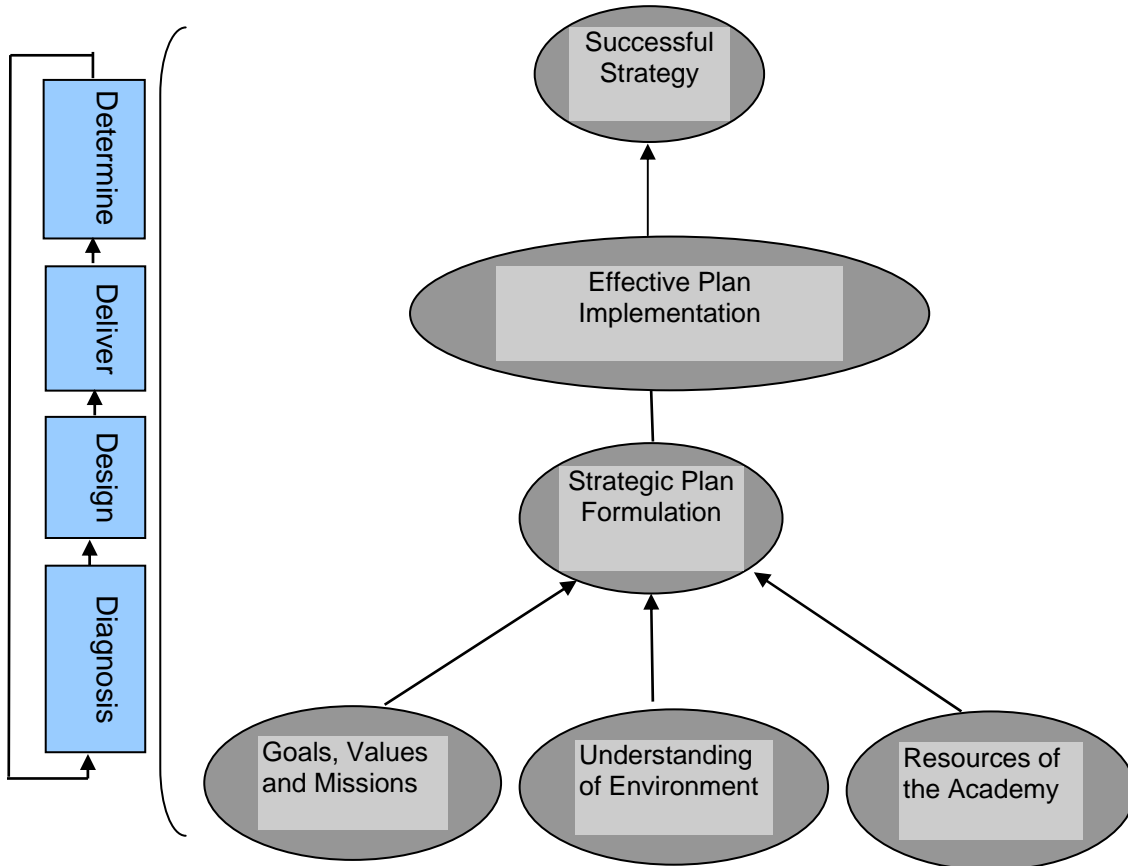
their individual schools, are limited in influence on campus-wide entrepreneurship education and awareness. Long-term success of a university-wide program to promote academic entrepreneurship requires cultural support from the entire campus, rather than one or two individual schools.

The diagnostic process did identify pockets of entrepreneurship that had long gone unnoticed. The Human Resource Education (HRE) program had produced many graduate students with a focus on entrepreneurship training. In fact, within the national Small Business Institute (SBI) program, the University was the first campus to host an SBI program outside of a School of Business - within the HRE department. The diagnostic effort aided the Academy to identify champions and partners. It also identified activities that were already occurring, and could be used in advocating that the desired organizational culture was not a completely new perspective.

The Academy's strategic activities also needed to be consistent with the goals of the university, the individual academic units on campus, and the values or long-term goals of the Academy itself. In the University strategic plan, economic development and global reach are important components of the vision of the university, and fostering innovation and creativity is one of the most important values.

Diagram IV provides a framework of the Academy's approach to establishing a campus-wide program. The right side shows a flow from strategy formulation to strategy implementation, and the left side shows the corresponding stage in the 4-D model. The four Ds constitute a dynamic process through which entrepreneurial needs are identified, entrepreneurship education is provided, entrepreneurship-related activities are sponsored, and entrepreneurship awareness is continuously enhanced. These two parts are not independent. The specification of strategic plans is drawn from the Diagnosis stage, and the modification of strategic plans is made according to the Determine, or evaluation, stage.

Diagram IV: A 4-D Strategic Management Framework



Although entrepreneurship education can be dated back more than 60 years,¹¹ the field is far from mature. In order for the efforts of the Academy towards strengthening an entrepreneurial culture at the University to be successful, a strategic process is indispensable. The 4-D model depicted in Diagram IV is one manifestation of the Academy's efforts in integrating formulation and implementation of its strategic plans. The right side of this framework gives a general presentation of common elements in successful strategies. Consistent mission and long-term goals are the guiding posts for the activities of the organization. The mission of the Academy for Entrepreneurial Leadership is to advance the understanding of entrepreneurship as

'...a vehicle for the creation of social, economic, and intellectual value through (1) advancing opportunity for human creativity and (2) identifying and leveraging resources for interdisciplinary collaboration.'

¹¹ Katz, Jeremy A. The chronology and intellectual trajectory of American entrepreneurship education: 1876-1999. *Journal of Business Venturing*, 18(2): 283-300, 2003.

During the preparation of the initial University of Illinois proposal, an informal diagnostic process was undertaken. The strategy and program components expressed in the proposal were derived from this effort and from knowledge of the campus culture and the level of entrepreneurship activity; knowledge of the higher education environment more broadly; and the state of entrepreneurship education and of entrepreneurship as a discipline nationally. With the awarding of the grant from the Kauffman Foundation, a more formal diagnostic effort was undertaken. The left side of Diagram IV exhibits the Academy's efforts in initiating the 4-D model in accordance with the general model at the right side. The Academy investigated the different constituents of the campus in terms of their perceptions of, participation in and expectations for entrepreneurship education and activities across the campus. The Diagnostic efforts served to confirm program components developed in the construction of the initial proposal to the Kauffman Foundation, and identified opportunities which had not been apparent. It aided in reprioritizing, fleshing out more specific objectives and approaches, and creating a strategic plan. The 4-D framework provides a process to draw up and implement the plan, and then to evaluate and modify it as needed.

Strategic plan formulation. The faculty and administrator surveys and interviews collected viewpoints from different constituents of the campus, which provided valuable information for the Academy in terms of its structure and organization, the appropriate decision-making procedure, the proposed activities, and the design and contents of the programs that the Academy will provide.

The Design stage: Objectives. The results of the diagnostic efforts were translated into objectives for the Academy. Table II shows a list of the entrepreneurship needs identified in the diagnosis stage, and the programs and projects that the Academy designed in response to these needs.

The plan outline includes: 1) strengthen entrepreneurship as a respected field of study; 2) establish a local, national and international identity for the Academy; 3) develop entrepreneurial skills; 4) identify entrepreneurship champions; and 5) create sustainability for the Academy. The more detailed objectives in Table II integrate the original strategic plan of the proposal for establishing the Academy for Entrepreneurial Leadership and the information obtained from the diagnostic studies.

Table II: From Strategic Plans to Strategic Objectives

Strategic Plans	Objectives
Strengthen entrepreneurship as a respected field of study	Create mentoring networks for faculty and students
	Identify and nurture faculty champions
	Nurture opportunities for cross-disciplinary and trans-domain networking
	Support faculty in developing curricular and co-curricular activities
	Support faculty and graduate students in participation in national community of entrepreneurship scholars and educators
	Establish programs to support faculty and graduate student research in entrepreneurship
Establish local, national and international identity for the Academy	Broaden the understanding and appreciation of entrepreneurship on the University of Illinois campus
	Communicate and disseminate best practices/models
	Collaborate with universities and other national organizations to expand awareness and best practices
	Promote the development of entrepreneurship ventures, whether social, economic, intellectual or cultural, in the University community
	Develop various publications to highlight entrepreneurial activity and opportunity on the University of Illinois campus
Develop entrepreneurial skills	Raise awareness of how to manage careers more entrepreneurially
	Expand entrepreneurial understanding among administrators
Identify entrepreneurship champions	Identify and nurture faculty champions
	Identify and nurture champions among administrators and other academic professionals
Create sustainability for the Academy	Raise minimum \$10 million endowment
	Identify and secure funding for the Academy from public sources
	Secure grants from various local, state and national organizations

Strategic plan implementation. The Design stage not only helped the Academy to identify the strategic objectives, but also the ways to execute those objectives, in terms of programs and projects. In response to one objective, for example to support faculty and graduate student research in entrepreneurship, the Academy developed a research fund to support faculty; partnered with the Center for International Business Education and Research (CIBER) and the Center for Global Studies to promote international/global entrepreneurship, including research; established a Graduate Scholars program and a Faculty Fellow Program; and hosted lectures by entrepreneurship scholars. Participation in the broader community of entrepreneurship scholars was encouraged through the publicizing of research and conference opportunities, and support for conference participation by faculty and graduate students. As well, the Academy created a research resource page on its Web site, and collaborated with the Kauffman Foundation on scholarly database projects.

The Faculty Fellows program is an example of the effort that integrated the needs and expectations identified from the initial stage with the Academy's resources and values.

In response to the request for rewarded entrepreneurial activities from the faculty, this program supports the development of entrepreneurship course and course modules across the Illinois curriculum. A faculty member can apply for funding to design a new course or revise a current offering. The Academy will also provide successful applicants with experiences to enhance understanding of entrepreneurial principles and sponsor educational and mentoring activities. As the course is taught, students acquire entrepreneurship skills or principles, within the context of a particular discipline.

Delivery. Implementation of the designed programs constitutes the Delivery stage, for which the Academy has designed a set of functional strategies, including marketing and operations. Because it is rather new and non-traditional in its approach, the Academy must actively promote both itself and an entrepreneurship orientation in the campus. Approaches are tailored to the various audiences. For general promotion, multimedia materials have been designed specifically for faculty, for alumni and for students. Among the efforts to market the Graduate Scholars initiative were announcements in an electronic newsletter distributed by the Graduate College and email announcements sent to those likely to interact with potential Graduate Scholars: prior scholars, Academy Faculty Fellows and Affiliates, and the directors of graduate programs in each department.

At the Deliver stage, the Academy collected feedback for evaluations at the Determine stage. Broad evaluation criteria were suggested by the stakeholders during the Diagnosis process, and more specific criteria are also determined for individual events or types of events. For example, at a workshop a feedback form would include questions about whether the event met participant expectations and whether they would recommend the workshop to a colleague. Together with these specific evaluation criteria, strategic consistency is important for evaluating the efficiency and effectiveness of the organizational efforts.

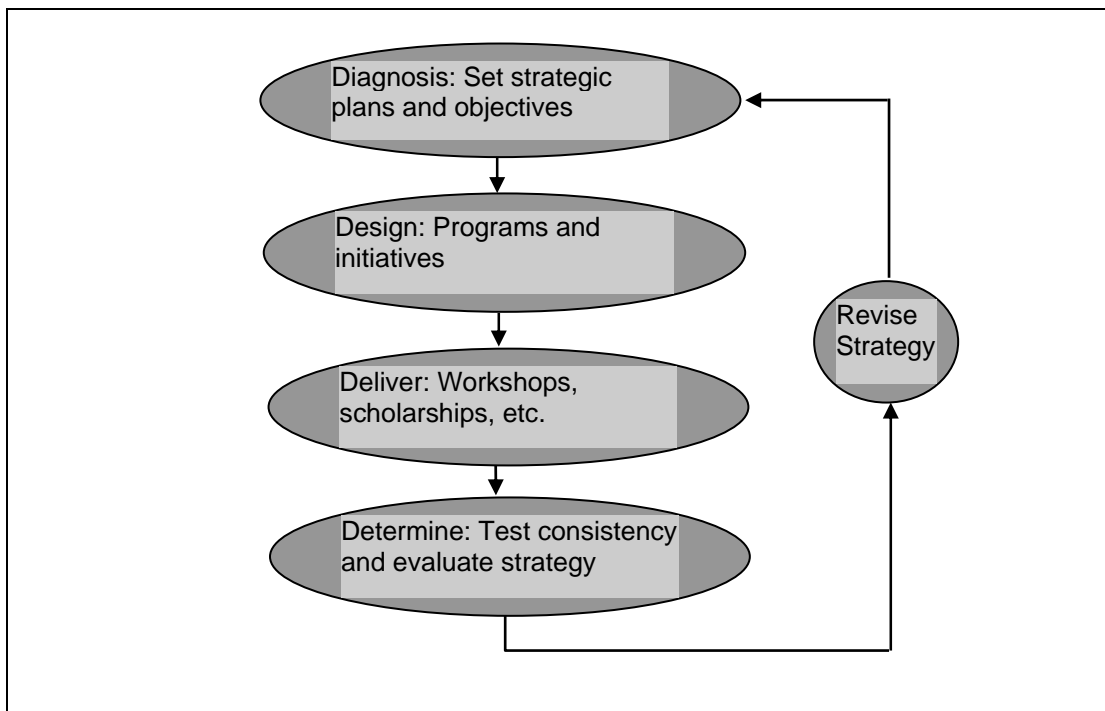
Initiatives must also meet Academy goals and objectives. One example: An analysis of the events organized in the 2005-2006 academic year shows that workshops are very popular, that graduate students and undergraduate students are the majority of attendees (62%), and that 99% of the workshop attendees rate the workshop content as satisfactory, valuable or surpassed expectations. More workshops targeted to students are therefore a viable continuing programming component. However, a significant minority of participants were faculty, staff, or from the local community, and should also be considered in deciding on programming. Workshop offerings and workshop partners were therefore expanded for 2006-2007, in order to both continue to serve students and to create offerings that might be an even better fit for other audiences.

The Academy formally examines its strategies and objectives twice each year, at an annual all-day planning meeting and a review halfway through the year, and major events are followed by debriefings.

Model dynamics. Diagram V presents the dynamics of the 4-D model. The 4 Ds constitute a strategic management process -- establishing strategic plans at the beginning, going through the Diagnosis, Design, Deliver and Determine procedure, and

modifying the specifics of the original strategic plans if necessary. The four stages of this process are not independent of each other. The process is dynamic, involves observing the environment in which the Academy operates, and often leads to refining of strategies and objectives, or de-emphasizing one activity in favor of another that was more effective in reaching an objective. Given the high interest in working with the Academy that has arisen on campus, it also helps the Academy to prioritize the many opportunities that are presented.

Diagram V: Dynamics of the 4-D Model



The Academy is the initiator of each 'D' of this framework, and for each stage, the Academy brings in a variety of participants whose inputs help to identify the entrepreneurship needs, to provide resources deployable by the Academy, or to redefine the direction of the Academy's efforts. The sequential process of this 4-D framework can be rephrased as following: for the first step, the Academy studies the cross-section campus in terms of entrepreneurship awareness, needs and resources; then designs and delivers programs identified through the initial Diagnosis process. Feedback is then obtained from the audience, as well as staff (and, where applicable, Advisory Board) input.

One attribute of the 4-D framework is that its inputs are from the campus, and its outputs are for the campus. Input from the faculty, administrators and students helped to define the initial plans, roles and activities of the Academy. Many activities can only

be carried out with the cooperation and shared resources of other units. The programming output is evaluated based upon the effect on campus wide entrepreneurship education, and only the initiatives regarded by faculty, students and other stakeholders as valuable are retained for further development. In this sense, the 4-D framework is rooted in the campus, rather than being imposed by the Academy.

The founders of the Academy for Entrepreneurial Leadership believed that implementing cross-campus entrepreneurship might require different strategies than traditional entrepreneurship education. A diagnostic effort to identify the heterogeneous needs, characteristics and expectations of the targeted “customers” was a first step in identifying appropriate strategies. Alignment of the Academy’s efforts with its community, the university and the environment is critical to the achievement of long-term goals. While a consistent strategy can provide clarity about the Academy’s purpose to its constituents, and support choices among possible opportunities, appropriate modification and revision is indispensable. The framework described herein provides an approach for making these modifications and revisions.

This approach enables the Academy to identify those important components that may affect its efforts (e.g., existing entrepreneurship activities; the university strategic plan; stakeholder views), and therefore successfully catch opportunities and avoid some risks. The Academy is better able to allocate its resources effectively, because every component of the Academy is organized and guided by the same strategic objectives.

APPENDICES - SURVEY INSTRUMENTS

Appendix A. Survey Instrument - Faculty

[Note: when distributed online, survey had an explanatory introduction]

1) Numerous definitions exist for “entrepreneurial faculty.” On a scale of 1 to 5, where 1 equals “Not at all important” and 5 equals “Extremely important,” how important do you consider the following activities in describing “entrepreneurial faculty”?

- 1 Not at all important
 - 2 Not too important
 - 3 Important
 - 4 Very important
 - 5 Extremely important
-
- ___ Publishing a textbook
 - ___ Collaborating on research with other colleagues at the University
 - ___ Editing a journal
 - ___ Seeking grant funds for research
 - ___ Collaborating on research with people in other organizations
 - ___ Obtaining a patent or copyright for a new technology
 - ___ Managing a research lab or group
 - ___ Conducting applied research
 - ___ Working with industry to commercialize a technology
 - ___ Designing a new course
 - ___ Organizing or participating in educational events for a non-university audience
 - ___ Leading a curriculum re-design effort
 - ___ Engaging students in service learning projects
 - ___ Incorporating themes of creativity, innovation or problem solving into coursework
 - ___ Integrating new teaching methods and tools into courses
 - ___ Teaching in a cross-disciplinary program
 - ___ Consulting with other organizations for a fee
 - ___ Starting a business while maintaining university status
 - ___ Serving on organizational boards
 - ___ Organizing a conference
 - ___ Lobbying or testifying in one’s field of expertise

- Consulting with other organizations on a pro bono basis
- Organizing a new interest group in an academic association
- Managing your career in a self-reliant, multi-faceted fashion
- Engaging in service / public engagement activities with community groups

2) Please rate the strength of the entrepreneurial behavior of a faculty member based on this scenario: A professor has developed software that helps with data modeling and analysis in geography. A disclosure is filed with the University Office of Technology Management, and copyright protection is registered.

- Not at all entrepreneurial
- Not too entrepreneurial
- Entrepreneurial
- Very entrepreneurial
- Extremely entrepreneurial

3) Please rate the strength of the entrepreneurial behavior of a faculty member based on this scenario: Two professors, one in marketing and one in music, decide to develop and team-teach a course in music promotion. The goal of the course is to provide both business and music students with knowledge and experience in how to organize a concert.

- Not at all entrepreneurial
- Not too entrepreneurial
- Entrepreneurial
- Very entrepreneurial
- Extremely entrepreneurial

4) Please rate the strength of the entrepreneurial behavior of a faculty member based on this scenario: A faculty member has won numerous teaching and mentoring or advising awards, including selection as a Carnegie Scholar by the Carnegie Foundation for the Advancement of Teaching. The Scholars are expected to investigate and document significant issues in teaching and learning within their disciplines.

- Not at all entrepreneurial
- Not too entrepreneurial
- Entrepreneurial
- Very entrepreneurial
- Extremely entrepreneurial

5) Please rate the strength of the entrepreneurial behavior of a faculty member based on this scenario: Capitalizing on the success of the TV series, a botany professor decides to write a book, "Being a Survivor." The book details how to find and use edible and medicinal plants.

- Not at all entrepreneurial
- Not too entrepreneurial
- Entrepreneurial
- Very entrepreneurial
- Extremely entrepreneurial

6) How often do you...

- 1 Never
- 2 Rarely
- 3 Sometimes
- 4 Often
- 5 Always

- Collaborate on research with other colleagues at the University
- Publish a textbook
- Seek grant funds for research
- Collaborate on research with people in other organizations
- Conduct applied research
- Design a new course
- Organize or participate in educational events for a non-university audience
- Engage students in service learning projects
- Incorporate themes of creativity, innovation or problem solving into coursework
- Integrate new teaching methods and tools into courses
- Teach in a cross-disciplinary program
- Consult with other organizations for a fee
- Serve on organizational boards
- Lobby or testify in your field of expertise
- Consult with other organizations on a pro bono basis
- Manage your career in a self-reliant, multi-faceted fashion
- Engage in service / public engagement activities with community groups
- Other (please describe below)

7) In the last three years, have you... (mark all that apply)

- Patented or copyrighted a new technology
- Started a business
- Worked with industry to commercialize a technology
- Managed a research lab or group
- Led a curriculum re-design effort
- Edited a journal
- Organized a conference
- Organized a new interest group in an academic association
- Earned an income outside of your university salary, related to your area of professional expertise
- Other (please describe below)

8a) Do you believe the University should reward faculty for entrepreneurial activities?

- Yes
- No

8b) IF YES: How should they be rewarded? (mark all that apply)

- Salary increases
- Promotions
- Considered in tenure decision
- Reduced course load
- More research support
- More teaching support
- Other (please describe)

9) How would you describe the culture of the University of Illinois? Would you say it is .

..

- Enterprising
- Innovative
- Traditional
- Forward thinking
- Dynamic
- Progressive
- Bureaucratic
- Other (please describe)

10) Of the attributes listed in question 9, which two do you believe best describe the culture of the University of Illinois? (select two)

- Enterprising
- Innovative
- Traditional
- Forward thinking
- Dynamic
- Progressive
- Bureaucratic
- Other (described above)

11) Do you believe the University of Illinois encourages its Faculty to be creative, stifles its Faculty's creativity, or has no impact on its Faculty's creativity? (select one)

- Promotes creativity
- Stifles creativity
- Has little or no impact on creativity

12a) In your efforts to be more innovative at this University of Illinois, have you encountered any barriers that have impeded your activities?

- Yes
- No

12b) If YES, what types of barriers have you faced?

Part II. Learning Opportunities

13a) Would you be interested in learning opportunities that are aimed at assisting faculty in being more entrepreneurial?

- Yes
- No

13b) IF YES, what format would best suit your interest? Would you be interested in participating in.. (select all that apply)

- Multiple short workshop sessions (1 to 1½ hours)
- Half-day workshop
- Full-day workshop
- Multi-week training course
- Day conferences
- Weekend conferences
- Online courses
- Other (please describe)

14) I would be interested in learning opportunities in the following topic areas:
(mark all that apply)

- Intellectual property and technology transfer for the academic researcher
- Industry collaboration for the academic researcher
- Community leadership
- Grant writing
- Incorporating creativity, innovation, problem solving in the classroom
- Writing a business plan
- Creating and managing a small organization
- Career development for new faculty
- Career development for mid-level faculty
- Career development for senior faculty
- Other (please describe)

15) I believe the following entrepreneurial learning opportunities should be available for my graduate students: (mark all that apply)

- Intellectual property management for the academic researcher
- Industry collaboration for the academic researcher
- Self-employment skills
- Writing a business plan
- Creating and managing a small organization
- Community leadership
- Create / manage your own career
- Non-faculty career alternatives
- Managing a faculty career entrepreneurially
- Other (please describe)

Part III. Demographic Information

Please provide the following demographic information. Remember, all of your responses are confidential, and data will only be analyzed in group form.

16) Faculty Status

- Tenured
- Tenure-track

17) Faculty Rank

- Assistant
- Associate
- Full

18) Have you received special awards/recognitions in the last five years for...
(check all that apply)

- Teaching
- Research / Scholarship
- Service
- Other (please specify)

19a) Have you ever held a full-time position in a non-academic environment?

- Yes
- No

19b) If YES, how many years? _____

20) In what school or college is your primary affiliation?

- Agricultural, Consumer & Environmental Sciences
- Applied Life Sciences
- Aviation
- Business
- Communications
- Education
- Engineering
- Fine & Applied Arts

- Labor & Industrial Relations
- Law
- Liberal Arts & Sciences -- Humanities
- Liberal Arts & Sciences - Sciences
- Liberal Arts & Sciences - Social Sciences
- Library
- Library & Information Science
- Medicine
- Nursing
- Social Work
- Veterinary Medicine

21) What is your gender?

- Female
- Male

22) What is your race or ethnicity?

- African American
- Asian or Pacific Islander
- Caucasian (non Hispanic/Latino(a))
- Hispanic/Latino(a)
- Native American
- Other

THANK YOU!

Please use the accompanying addressed envelope to send to: Survey Research Lab, MC-442

Appendix B. Stakeholder/Administrator Interview Protocol

Interview Day and Date _____ Interview Time _____

Type of Interview _____ In-Person _____ E-Mail _____ Phone

Interviewer _____ Karen Dowd _____ Courtney Price

Name of Interviewee _____

Title _____

E-Mail _____ Telephone _____

Campus Mailing address _____

Notes

Introduction

Thanks again for your time. This should take about 45 minutes.

As you know, I'm an outside consultant retained by the Academy of Entrepreneurial Leadership Development to obtain input from key stakeholders such as yourself on the plans and direction of the Academy.

I and another consultant are talking with about 40 key people on the Illinois campus. We'll be asking the same questions of each person interviewed for this project. Your comments will be reported anonymously, in aggregate form only.

Before we begin, let me check a few details about you [VERIFY OR FILL IN THE ABOVE LINES].

Do you have any questions before we begin?

Questions

[RECORD RESPONSES BELOW. IF YOU TAKE OR ADD NOTES ON SEPARATE NOTEPAD, NUMBER THE ITEMS Q-1, Q-2, MISC., ETC.]

Let's start by talking about your goals for bringing entrepreneurial thinking to [the university, or your college, department or area - specify one, depending on the role of the interviewee]. What are your goals? What have you accomplished to date? What support (internal/external) have you had?

What is your definition of entrepreneurial thinking across the curriculum as it relates to the teaching, research, and professional development opportunities provided to faculty and graduate students by your unit?

What are [the university's, or your college's, department's or area's - specify one, depending on the role of the interviewee] current entrepreneurial needs? ? What have been some of the obstacles? What do you need to meet your goals? What if any resources been committed to reach these goals?

What entrepreneurial activities and professional development offerings could be provided by the Academy in your department or area?

What if any are some of the possible synergies you see between your department or area and the Academy?

What in your view are some of the primary challenges you think will be faced by the Academy, and how can these be overcome?

What would success [for the Academy] look like to you? What tangible outcomes would you like to see from the Academy: a) within 18 months? b) within 5 years? c) within 10 years?

What ideas do you have for faculty to encourage entrepreneurial thinking into their teaching, research or professional development?

One of our near-term projects is interviewing successful tenure-track and tenured faculty who represent both "traditional" and "entrepreneurial" career paths. Can you suggest a name of an individual in your unit who is an "exemplar" tenured or tenure-track faculty member, who manages his or career entrepreneurially or who incorporates entrepreneurial themes into his or her coursework and/or research?

Tenured _____

Tenure-track _____

Can you suggest a name of an individual in your unit who is an "exemplar" tenured or tenure-track faculty member, who manages his or her career in a more traditional way?

Tenured _____

Tenure-track _____

How would you like to be involved in the Academy?

Is there anything else you'd like to say about how the Academy can directly help you and the university, your college, department or area?

Is there anything else you'd like to add – something we discussed you'd like to return to?

Thanks for your time. Here's my card if you have any questions or anything to add.

NOTES (continue on reverse if necessary):

Appendix C. Freshman Survey Instrument

1. Are you 18 years of age or older?

{Choose one}

No

Yes

[IF NO] Sorry, participants in this survey must be 18 years of age or older. Thank you so much for your time.

If you have any questions, or would like a summary of the analysis of this questionnaire, please contact Leigh Estabrook at leighe@uiuc.edu.

[IF YES] By selecting "Yes", you are implying that you understand the scope of this project and agree to participate voluntarily.

2. Have you ever owned a business or worked independently as a creative artist or inventor?

{Choose one}

No (skip to Q4)

Yes

3. Do you currently own a business or work independently as a creative artist or inventor?

{Choose one}

No

Yes (skip to Q5)

4. While you are an undergraduate do you expect to own a business or work independently as a creative artist or inventor?

{Choose one}

No

Yes

5. Have you ever been involved in an organization whose purpose was/is to bring about social change?

{Choose one}

No (skip to Q7)

Yes

6. Are you currently involved in an organization whose purpose is to bring about social change?

{Choose one}

No

Yes

7. While you are an undergraduate, do you expect to be involved in an organization whose purpose is to bring about social change?

{Choose one}

- No
- Yes

8. When you graduate, do you expect to:

(CHECK ALL THAT APPLY)

{Choose all that apply}

- Own your own business
- Work creatively as an inventor or creative artist
- Work to bring about social change within an organization

9. Does anyone in your immediate family (parents, grandparents):

(CHECK ALL THAT APPLY)

{Choose all that apply}

- Own their own business
- Make their living as an inventor or creative artist
- Work directly for social change within an organization

10. If they were available, would you take academic courses to:

(CHECK ALL THAT APPLY)

{Choose all that apply}

- Help you start your own business during college
- Succeed as an inventor or creative artist
- Work effectively for social change
- Learn more about entrepreneurship, starting a business or working to bring about social change

11. Do you plan to go to graduate school?

{Choose one}

- Yes, immediately after receiving my baccalaureate degree
- Yes, but not right away
- No

Finally, we'd like to ask a few questions that will help us understand any differences between students in their career goals.

12. In what college are you enrolled?

{Choose one}

- Agricultural, Consumer and Environmental Sciences
- Applied Life Studies
- Aviation
- Business
- Communications
- Education
- Engineering

- Fine and Applied Arts
- Liberal Arts and Sciences - General Curriculum
- Liberal Arts and Sciences - Declared Major

13. Have you decided upon a major?

{Choose one}

- No
- Yes

14. What is your gender?

{Choose one}

- Male
- Female

15. Did you take any time off between completing high school and enrolling as a freshman at UIUC?

{Choose one}

- No
- Yes

Thank you so much for your time.

To print a review of your answers, select "Review" at the bottom of this page. A new window will open. Select "Print" then click the "Return to Survey" link to continue the survey.

If you are finished answering, please click "FINISH" at the bottom of this page. This will submit your data, close the survey, and display a printable summary of your responses for your records. By clicking "FINISH" you are implying that you understand the scope of this project and agree voluntarily to participate.

If you have any questions, or would like a summary of the analysis of this questionnaire, please contact ...

Appendix D. Graduate Student Survey Instrument and Cover Letter

EMAIL INVITATION

Dear UIUC Graduate Student:

I am writing to ask for your help in making the new Academy for Entrepreneurial Leadership responsive to the needs of UIUC graduate students. The Academy, funded a year ago, is intended to support all students who could draw from its resources.

The Academy is not only for business students, but for people like the creative artist whose goal is to make a living from being an artist - or the doctoral student in English who does not want to be limited by options in that field - or for the engineer who wants to start his/her own company - or the student who hopes to bring about social change within the larger organizations in which he/she expects to work.

The following brief questionnaire will help the Academy develop programs and services; but we are new and we need to understand your needs, your career goals and how we might be helpful. I hope you will take the time to complete the survey. The information you provide will be held in strictest confidence; the results will be reported only in aggregate statistical form. Completing the questionnaire should take no more than 15 minutes - and all who do complete the questionnaire by April 8, 2005 will have their email addresses entered into a drawing for a \$500 cash prize - to be awarded April 11, 2005.

To begin the survey, please click the following link:
[SURVEY LINK]

Leigh Estabrook, Chair
Campus Advisory Committee to the Kauffman Academy
contact: leighe@uiuc.edu; 333-4209

Kauffman Student Survey

Page 1

1. Are you presently employed in a position other than a graduate or research assistantship?

{Choose one}

- Yes No
 Presently own my own business []

The following questions ask you about your academic and career goals, your preparation for self-employment, starting your own business or initiating change. Specifically, we are asking about skills that allow you to take your ideas, your inventions and/or creative works "to market." Have you been given the opportunity to learn how to build a business or to make money from your "creations" at UIUC? Have you learned how to transform what you do from a personal passion to something from which others can benefit?

Your answers will help shape the programs and services the Kauffman Academy is developing. You may go back on the survey and change any answers until you click the "submit" button at the conclusion of the questionnaire.

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1a. If yes, do you expect to remain in this organization once you complete your degree?

{Choose one}

- Yes No

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1b. If yes, please describe the organization.

{Enter answer in paragraph form}

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1c. If no, what type of work do you expect to be doing immediately after receiving your degree from UIUC?

{Choose all that apply}

- Work as faculty member
 Work in research or in a post doctoral position
 Work for non-profit or government
 Work for-profit business or organization
 Be self-employed or start a business
 Don't plan to work immediately after graduation
 Plan to continue my education
 I don't know
 Other []

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7a. If yes, what barriers do you see to accomplishing this?

{Enter answer in paragraph form}

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8. If you were given the opportunity to learn about entrepreneurial skills, how interested would you be in learning about each of the following:

How to write a business plan?

{Choose one}

- Very Little
- Quite a Bit
- A Great Deal
- Don't Know

Where and how to find financing to support for a new idea/invention?

{Choose one}

- Very Little
- Quite a Bit
- A Great Deal
- Don't Know

How to transform my ideas to something that can be used and/or enjoyed by others?

{Choose one}

- Very Little
- Quite a Bit
- A Great Deal
- Don't Know

How to bring about change in organizations?

{Choose one}

- Very Little
- Quite a Bit
- A Great Deal
- Don't Know

How to communicate my ideas effectively to others?

{Choose one}

- Very Little
- Quite a Bit
- A Great Deal
- Don't Know

How to organize resources to make an idea or creation a reality?

{Choose one}

- Very Little
- Quite a Bit
- A Great Deal
- Don't Know

How to recognize opportunities to implement my ideas?

{Choose one}

- Very Little
- Quite a Bit
- A Great Deal
- Don't Know

"Marketing" my work or ideas?

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How I can enhance my formal educational preparation to become more independent?

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to create change within a larger organization?

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to create social change?

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

Employment in newly established businesses?

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

The importance of commercializing new technologies?

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

Making a living from my creative/artistic interests and talents?

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

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9. Given the time constraints imposed by your ongoing academic studies, work and family obligations, what are your preferred modes of learning about entrepreneurship/self-employment/starting a business?

Short courses in the summer

{Choose one}

- Like a lot
 Like a little
 Don't like
 Don't know or care

Short courses during the academic year

{Choose one}

- Like a lot Like a little
 Don't like Don't know or care

Case studies as part of regular coursework

{Choose one}

- Like a lot Like a little
 Don't like Don't know or care

Lectures with readings as part of regular coursework

{Choose one}

- Like a lot Like a little
 Don't like Don't know or care

Mentoring relationships with entrepreneurs in my own field of study

{Choose one}

- Like a lot Like a little
 Don't like Don't know or care

Internships

{Choose one}

- Like a lot Like a little
 Don't like Don't know or care

Workshops

{Choose one}

- Like a lot Like a little
 Don't like Don't know or care

Self-paced learning from online course material

{Choose one}

- Like a lot Like a little
 Don't like Don't know or care

A computer game (similar to SimCity)

{Choose one}

- Like a lot Like a little
 Don't like Don't know or care

10. (Yes, a long question, but you are almost finished with the questionnaire-- thanks) To what extent have you had the opportunity to learn about the following through your friends at UIUC, faculty mentors and visiting presenters, coursework or extracurricular opportunities:

How to write a business plan? - Employment

{Choose one}

- Very Little
- Quite a Bit
- A Great Deal
- Don't Know

How to write a business plan? - Friends

{Choose one}

- Very Little Quite a Bit
- A Great Deal Don't Know

How to write a business plan? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
- A Great Deal Don't Know

How to write a business plan? - Coursework

{Choose one}

- Very Little Quite a Bit
- A Great Deal Don't Know

How to write a business plan? - Extracurricular Opportunities

{Choose one}

- Very Little Quite a Bit
- A Great Deal Don't Know

Where and how to find financing to support for a new idea/invention? -

Employment

{Choose one}

- Very Little Quite a Bit
- A Great Deal Don't Know

Where and how to find financing to support for a new idea/invention? - Friends

{Choose one}

- Very Little Quite a Bit
- A Great Deal Don't Know

Where and how to find financing to support for a new idea/invention? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
- A Great Deal Don't Know

Where and how to find financing to support for a new idea/invention? - Coursework

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

**Where and how to find financing to support for a new idea/invention? -
Extracurricular Opportunities**

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

**How to transform my ideas to something that can be used and/or enjoyed by others?
- Employment**

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

**How to transform my ideas to something that can be used and/or enjoyed by others?
- Friends**

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

**How to transform my ideas to something that can be used and/or enjoyed by others?
- Faculty Mentors and Visiting Presenters**

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

**How to transform my ideas to something that can be used and/or enjoyed by others?
- Coursework**

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

**How to transform my ideas to something that can be used and/or enjoyed by others?
- Extracurricular Opportunities**

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to bring about change in organizations? - Employment

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to bring about change in organizations? - Friends

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to bring about change in organizations? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to bring about change in organizations? - Coursework

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to bring about change in organizations? - Extracurricular Opportunities

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to effectively communicate your ideas to others? - Employment

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to effectively communicate your ideas to others? - Friends

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to effectively communicate your ideas to others? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to effectively communicate your ideas to others? - Coursework

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to effectively communicate your ideas to others? - Extracurricular Opportunities

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to organize resources to make an idea or creation a reality? - Employment

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to organize resources to make an idea or creation a reality? - Friends

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to organize resources to make an idea or creation a reality? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to organize resources to make an idea or creation a reality? - Coursework

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to organize resources to make an idea or creation a reality? - Extracurricular Opportunities

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to recognize opportunities to implement your ideas? - Employment

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to recognize opportunities to implement your ideas? - Friends

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to recognize opportunities to implement your ideas? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to recognize opportunities to implement your ideas? - Coursework

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to recognize opportunities to implement your ideas? - Extracurricular Opportunities

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

"Marketing" your work or ideas? - Employment

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

"Marketing" your work or ideas? - Friends

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

"Marketing" your work or ideas? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

"Marketing" your work or ideas? - Coursework

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

"Marketing" your work or ideas? - Extracurricular Opportunities

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How I can enhance your formal educational preparation to become more independent? - Employment

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How I can enhance your formal educational preparation to become more independent? - Friends

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How I can enhance your formal educational preparation to become more independent? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How I can enhance your formal educational preparation to become more independent? - Coursework

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How I can enhance your formal educational preparation to become more independent? - Extracurricular Opportunities

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to create change within a larger organization? - Employment

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to create change within a larger organization? - Friends

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to create change within a larger organization? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to create change within a larger organization? - Coursework

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to create change within a larger organization? - Extracurricular Opportunities

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to create social change? - Employment

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to create social change? - Friends

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to create social change? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to create social change? - Coursework

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

How to create social change? - Extracurricular Opportunities

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

Employment in newly established businesses? - Employment

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

Employment in newly established businesses? - Friends

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

Employment in newly established businesses? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

Employment in newly established businesses? - Coursework

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

Employment in newly established businesses? - Extracurricular Opportunities

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

The importance of commercializing new technologies? - Employment

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

The importance of commercializing new technologies? - Friends

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

The importance of commercializing new technologies? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

The importance of commercializing new technologies? - Coursework

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

The importance of commercializing new technologies? - Extracurricular Opportunities

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

Making a living from your creative/artistic interests and talents? - Employment

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

Making a living from your creative/artistic interests and talents? - Friends

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

Making a living from your creative/artistic interests and talents? - Faculty Mentors and Visiting Presenters

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

Making a living from your creative/artistic interests and talents? - Coursework

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

Making a living from your creative/artistic interests and talents? - Extracurricular Opportunities

{Choose one}

- Very Little Quite a Bit
 A Great Deal Don't Know

11. How well has your academic program prepared you for alternative careers in your field?

{Choose one}

- Very Little
- Quite a Bit
- A Great Deal
- Don't Know

12. Is there anything else about your career goals you would like to tell us?

{Enter answer in paragraph form}

13. In what school or college are you currently enrolled?

{Choose one}

- Agricultural, Consumer and Environmental Sciences
- Applied Life Studies
- Aviation
- Business
- Communications
- Education
- Engineering
- Fine and Applied Arts
- Labor and Industrial Relations
- Law
- Liberal Arts and Sciences
- Library and Information Science
- Medicine
- Social Work
- Veterinary Medicine

14. What degree are you pursuing?

{Choose one}

- Master's
- PhD
- Certificate
- Non-Degree

15. Has anyone in your immediate family (parents, siblings) ever started their own business or supported themselves by being self-employed?

{Choose one}

- Yes
- No

16. What is your gender?

{Choose one}

- Male
- Female

17. As you think back over these questions can you think of some things we should but have failed to ask about how UIUC has prepared you for worklife after graduation?

{Enter answer in paragraph form}

18. Is there one thing you can identify that would better prepare you?

{Enter answer in paragraph form}

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Thank you for taking the time to help us understand your needs.

If you are finished answering, please click "FINISH" at the bottom of this page.

If you have any questions, or would like a summary of the analysis of this questionnaire, please contact Leigh Estabrook at leighe@uiuc.edu.