First Year Review of the Entrepreneurship and Innovation Program (EIP) at the University of Maryland

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Abstract - Based on the surge in demand for undergraduate programs in entrepreneurship and innovation at the University of Maryland and throughout the country, the Entrepreneurship and Innovation Program (EIP) was launched in fall 2010 for freshmen and sophomores. This living-learning Honors College Program combines small classes taught by exceptional faculty with the wide range of additional education opportunities offered by a large research institution. For the living component of the program, all students reside in specially designated floors of an Honors College residence hall for both years. Through company creation, courses, seminars, workshops, competitions, and volunteerism, students are part of a special experiential learning model. The academic component of the program includes four courses totaling nine credits, with all students enrolling in one course per semester for each of their four semesters in the program.

This paper provides a review of the first year launch and management of EIP, giving an interim progress review, assessment of initial results, and a discussion of lessons learned. EIP has attracted the top academic achievers at the University of Maryland and receives high scores in student satisfaction. First-year retention was very high and recruitment figures for the second EIP cohort of students showed an increase in the number of University applicants selecting EIP as their first choice of living-learning programs on campus.

This paper serves as the second in a series of papers addressing the design, launch, and management of the new EIP. This paper’s observations, results, and new developments with the program are a companion to The Journal of Engineering Entrepreneurship’s January 2011 article on EIP (Green, 2011).

1. Introduction

As entrepreneurship emerges as a sustainable competitive advantage of the U.S., educating future generations on the opportunities and challenges of building new firms is increasingly critical (Schramm, 2006). Particularly in times of economic uncertainty, it is the new products, new processes, and new markets that present the most viable and significant avenues to recovery and prosperity (Baumol, 2011). Universities can play a central role in developing the entrepreneurial aspirations and know-how of their students, and serve a formative role in the creation of new ventures.

The University of Maryland is a recognized leader in entrepreneurship and innovation education through its award-winning Hinman CEOs living-learning program for upperclassmen, as well as the dynamic entrepreneurship courses and offerings of the Maryland Technology Enterprise

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Institute (Mtech) in the A. James Clark School of Engineering. At Mtech, we believe that a firm grasp of the entrepreneurial process and mindset benefits every person engaged in developing technology. A core Mtech goal is to infuse technology-creating students, faculty members, and professionals with that knowledge and its accompanying skills. Armed with an entrepreneurial mindset, technology creators drive economic growth by launching successful ventures and bringing life-changing products and services to market.

Launched in fall 2010, EIP is a joint program of Mtech and the University of Maryland Honors College (Green, 2011). The program is based on Mtech’s Hinman CEOs Program, the nation’s first living-learning entrepreneurship program (Green, 2009). While Hinman CEOs serves approximately 90 juniors and seniors competitively selected from throughout the campus, EIP serves a larger and younger audience with approximately 150 freshmen and sophomores from the Honors College.

In contrast to many entrepreneurship programs that are aimed at graduate students or upperclassmen, EIP is exclusively designed for freshmen and sophomores. When entrepreneurship and innovation are introduced early, the knowledge gained significantly impacts direction towards more entrepreneurial and innovative careers. In living-learning entrepreneurship programs, this knowledge combines with the community to create a dynamic hub for entrepreneurial skills building and innovative venturing (Green & Morris, 2011).

2. THE EIP EXPERIENCE

Students selected for EIP receive encouragement and resources for entrepreneurially pursuing innovative ideas and careers. The living-learning nature of the program provides a wonderful opportunity to engage students through a host of methods proven within Hinman CEOs.

Since 1999, the Hinman CEOs Program has hosted deans, faculty, entrepreneurship staff, and resident life staff from Bowling Green University, Howard University, University of Illinois, Iowa State University, Johns Hopkins University, Louisiana State University, Louisiana Tech, Michigan Technology Institute, N.C. State, Oregon State University, Penn State University, Shenandoah University, Washington State University, Waseda University of Japan, University of Virginia, University of Wisconsin-Madison, Worcester Polytechnic Institute, and University of the Pacific. Through these interactions and subsequent discussions with a number of the more than 20 living-learning programs in entrepreneurship started since Hinman CEOs, best practices were sourced for EIP and Hinman CEOs from comparative programs.

These approaches, methods and resources as listed in Figure 1 are based on those for juniors and seniors in Hinman CEOs and have evolved to serve the freshmen and sophomores of EIP by focusing on the opportunity discovery component of entrepreneurship.

Research to date (Shane 2000, 2003) attributes enhanced discovery and recognition of entrepreneurial opportunity to two reasons. First, better “access to information” about the potential existence of a given opportunity improves discovery. Second, select individuals are better at recognizing opportunity because of superior “cognitive capabilities” in opportunity recognition. With opportunity recognition described as “the cognitive processes through which individuals conclude that they have identified an opportunity” (Baron, 2006: 107), the act of opportunity discovery is the first stage of the opportunity recognition process. Therefore, based on the role of opportunity discovery, the emphasis of the EIP experience is to help these young
students discover entrepreneurial opportunities and develop an understanding of the associated challenges and rewards of acting on entrepreneurial opportunities.

**Figure 1. The EIP Experience**

While a host of resources will be provided to EIP students leveraging existing Mtech programs and relationships, highlights of the new program include:

- **Living Community** – For the living component of the program, all students reside in exclusive program residence hall floors for both years. EIP offices are located within the residence hall to encourage frequent mentoring and interactions. A rich set of community building activities is provided for program students.

- **Experiential Learning** – Through courses, seminars, workshops, competitions, volunteerism, and starting companies, EIP students are part of a special experiential learning model. While providing entrepreneurship and innovation education and helping teams to start and operate ventures are important, a continuum of hands-on mentoring is provided to help students not yet engaged in founding and managing start-ups to develop their entrepreneurial skills (Kolb & Kolb, 2005).

- **On-Demand Coaching and Mentoring** – The valuable residential experience is complemented with the co-located offices of EIP staff. In this way, students can easily visit staff offices to discuss their latest new venture idea or to tackle a tough legal, financial, or ethical question.

- **Challenging Academics** – The program-specific academic component includes four courses totaling nine credits, with students enrolling in one course per semester for each of their four semesters in the program. This provides continuity between the students and the program throughout the two-year experience.
Impact Seed Fund – A $50,000 seed fund available for students of the Hinman CEOs Program was extended to include students in the EIP. These funds are exclusively dedicated to new ventures making a positive social impact: typically in education, healthcare, environment, and related areas.

Entrepreneurial Internships – Internships play an important role in the entrepreneurship and innovation experience. On a competitive application basis, select students in EIP are placed in these entrepreneurial internships.

3. LAUNCHING THE PROGRAM

EIP benefited from being launched by Mtech, which already had considerable experience running two other multi-year entrepreneurship programs, Hinman CEOs and Hillman Entrepreneurs, a program for local community college transfer students. The EIP format, structure, and interim staff for EIP all came from Hinman CEOs. Honors College leadership provided major funding, support, and guidance for the program launch. EIP had strong personal support from the University president and provost, as well as from their offices and the Office of Undergraduate Studies.

Once the program was approved in fall 2009, a search committee was formed to find a program director and coordinator, with the ideal candidates for the role having experience both in entrepreneurship and academia. The director was selected from over 100 applicants. Key roles are managing the overall program, designing curricula, teaching select courses, and leading mentoring and other co-curricular activities, including those related to new product and business creation. The coordinator is responsible for organizing operational functions, program activities, marketing initiatives, and related activities.

Additional staff and resource support comes from both Mtech and the Honors College. Mtech support includes management, marketing, accounting, and other administrative activities. Students also participate freely in many Honors College and Mtech programs and events. Staff from Mtech’s incubator and other programs are often guest speakers for EIP. Teaching assistants are recruited from the Hinman CEOs Program to give EIP students direct contact with other students already engaged in entrepreneurial activities.

4. MARKETING AND RECRUITMENT

To be eligible for EIP, incoming students must first be admitted into the University of Maryland Honors College. All successful applicants to the University who apply by the early consideration deadline are reviewed for admission to the Honors College. Once admitted to the Honors College, students are asked to indicate which of the available living-learning programs (five in 2010), including EIP, they prefer. Based on the students’ preferences and other criteria, students are offered invitations by the individual living-learning programs.

Because EIP was in its first year, there were dual goals of ensuring that both high school guidance counselors and students were aware of the program and understood the requirement that prospective students first be admitted into the Honors College before being eligible to join EIP. In support of this goal, the university, the Honors College, Mtech, and EIP conducted a series of activities and events to promote the program and encourage student enrollment.
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In late summer and early fall, a key objective was to encourage academically talented high school seniors to complete the University of Maryland admissions application by the November 1 deadline required for consideration by the Honors College. First-year marketing initiatives included mailings to guidance counselors in select high schools as well as emails to students who attended Mtech’s high school entrepreneurship programs. Representatives from the Honors College and the Office of Admissions visited select high schools. Additionally, current EIP students were encouraged to inform friends from their former high schools about the program.

In the spring, the Honors College conducted on-campus open houses for invited students and their parents, with the goal of helping to convert invitees into enrollments. Breakout sessions were conducted by each of the living-learning programs for their invitees and included presentations by the director and panel discussions in which current students answered questions from prospective students and their parents.

During the summer, the Honors College conducted a series of orientation days, again with breakout sessions hosted by each living-learning program. During part of these sessions, students were separated from their parents; the parents participated in a question and answer session with the program director, while the students participated in icebreaking, creativity, and community-building activities with the program coordinator.

Throughout the year, the EIP website (www.eip.umd.edu) was updated to align with each marketing and recruitment phase. In addition, information and deadline reminders were posted on our Facebook page and our Twitter feed (www.twitter.com/eipumd).

5. STUDENT ENROLLMENT

The 2010-2011 academic year marked the first full operational year of the newly organized Honors College, which plays a key role in the University’s strategic plan to “attract a larger pool of applications from academically talented students, enroll more students from underrepresented groups, enroll an increasingly stronger group of freshman and transfer students, and become the school of choice for more of the highest achieving students graduating from Maryland high schools” (University of Maryland, Strategic Plan 2008, 11). In line with this goal, EIP has attracted many top academic achievers at the University of Maryland; incoming students had an average high school GPA of 4.30, and the 25th and 75th percentiles of their SAT scores were 1345 and 1470, respectively. Seventeen percent of the inaugural cohort received Banneker/Key merit-based scholarships, the University of Maryland's most prestigious academic award for undergraduates offered to the top one percent of entering freshmen each year.

Of the students admitted to the Honors College for fall 2010, 184 students selected EIP as their most preferred living-learning program; all 184 were invited to join the program. An additional seven students, all of whom selected EIP as their second preference, were invited to join the program, for a total invitee list of 191 students. Of the 191 invitees, 74 enrolled in EIP, for a yield of 39 percent. This yield was among the highest of the five Honors College programs. Two-thirds of the students in the first EIP cohort were male, and one-third female. Five percent of students were first-generation college-bound. Forty-seven percent identified themselves as white, 27 percent as Asian, eight percent as Hispanic, and four percent as African-American. Three percent identified themselves as belonging to more than one race, and 11 percent did not identify their race.
In fall 2011, the program welcomed a second cohort of students to the program. Of the students admitted to the Honors College, 240 students selected EIP as their preferred living-learning program, a 30 percent increase from the previous year. Of these students, 200 were invited to join EIP. An additional 11 students, who selected EIP as their second preference, were invited for a total of 211. Of these students, 70 students enrolled in EIP, for a yield of 33 percent.

Similar to the previous cohort, two-thirds of the students in the second EIP cohort are male, and one-third female. The ethnic and racial diversity of the students increased with 51 percent of students self-identifying as white, 20 percent as Asian, 13 percent as African-American, and 7 percent as Hispanic. Three percent of students identified themselves as belonging to more than one race. Six percent did not identify their race. Forty percent of the second EIP cohort members are engineering majors, 37 percent are business majors, and 23 percent are pursuing a broad range of majors including mathematics, English, government, linguistics, and communications.

EIP students have diverse interests and backgrounds. Approximately 40 percent of the first EIP cohort is business majors and approximately 30 percent is engineering majors. The remainder is pursuing a broad range of majors including psychology, government, and agricultural science. The cohort includes musicians and athletes, plus students with direct experience in entrepreneurship and innovation, such as product design and development.

6. THE RESIDENTIAL EXPERIENCE

All EIP students live together on specially designated floors of the La Plata residence hall for the two years of the program. The residential requirement is integral to creating a rich, diverse, and dynamic atmosphere conducive to the sharing of ideas, team-building, and entrepreneurial activity. During the early part of the first semester, Resident Life staff reported that EIP students had achieved an extremely high level of group bonding. In addition, student satisfaction survey results indicate that students see value in living in close proximity to their peers, as evidenced by 78 percent of student satisfaction survey respondents “strongly agreeing” or “agreeing” with the statement, “Living alongside fellow EIP students is a critical element of the program.”

La Plata Hall was built in 1968 and is a nine-level, traditional-style hall that accommodates over 500 residents. Each floor consists of approximately 40 rooms along a long hallway, divided by a large community lounge and elevator bank in the center. The building is coed by wing, with women and men housed separately on either side of the lounge. Rooms range in size from singles to quads. No renovations or modifications were made to the student rooms for EIP.

The presence of a community lounge on each floor helps to support group bonding among EIP members by creating a central meeting and social space. Student bonding also is facilitated by the support of the Resident Assistants (RAs), one of whom lives on each wing of each floor. The RAs, student members of the Department of Resident Life, develop activities and programs for the residents on each floor and generally oversee student behavior.

Developing a cooperative relationship with the RAs and with more senior, full-time Resident Life staff is an important factor for successful operations of the living-learning program. All RAs in the residence hall are supervised by a Resident Director (RD) who takes a lead role in managing any issues related to student violations of residence hall rules and regulations as well as legal violations.
Discrepancies between the number of EIP students and the number of beds on each floor mean that a portion of EIP students may be housed on floors that include non-EIP residents. To help mitigate the effects of this population incongruence by gender and by membership in EIP, the program worked with the RAs on a direct basis to find programs that would be both beneficial to EIP students as well as of interest to other members of the floor communities.

An ongoing challenge for the program is providing the appropriate type, number, and scheduling of classroom, activity, and office spaces to support the needs of the program. To accommodate EIP and other living-learning programs, La Plata is undergoing a two-year renovation to create appropriate spaces on the first and lower levels of the building. During the first year of the program, first floor dorm rooms were converted into faculty and staff offices for EIP. Additionally, lower level rooms were renovated to create classrooms and team work/study rooms to support student projects and business creation activities. In the coming year, additional work will be done to complete the office space renovation, and renovations will be initiated on a large recreation room shared by both the Honors College and the Department of Residence Life.

7. Academics

A faculty advisory committee was formed to provide guidance for the program’s academic curriculum. Chaired by the Mtech director, its initial members included tenured faculty from the schools of engineering, business, and architecture.

The EIP curriculum is an experiential-learning model combining interactive classes, guest speakers, team projects, case studies, and out-of-class activities geared towards team-building, innovation, and business creation. Students are required to complete 9 credits of EIP specific coursework during their freshman and sophomore years, plus an additional 7 credits of Honors College seminars and courses to be eligible for the EIP Honors citation.

<table>
<thead>
<tr>
<th>Fall Semester</th>
<th>Spring Semester</th>
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<tbody>
<tr>
<td><strong>Freshman Year</strong></td>
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<tr>
<td>HEIP 143: Foundations of Entrepreneurship &amp; Innovation</td>
<td>HEIP 144: Contemporary Issues in Entrepreneurship &amp; Innovation</td>
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<tr>
<td>is a seminar course focused on building the entrepreneurial mindset and introducing basic entrepreneurship principles and terminology. <em>(1 credit)</em></td>
<td>inspires innovation and creativity through interactive lectures, workshops, and case studies in contemporary issues to include design, energy, life sciences, healthcare, technology. <em>(3 credits)</em></td>
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<td><strong>Sophomore Year</strong></td>
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<td>provides an introduction to the opportunities and challenges of entrepreneurship and innovation from an international perspective through lectures and guest speakers with international experiences. <em>(3 credits)</em></td>
<td>addresses the global necessity to develop and implement solutions to critical social and environmental concerns in ways that are both technologically viable and economically sustainable. Top ventures may be awarded part of the $50,000 Mtech Impact Seed Fund. <em>(2 credits)</em></td>
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Figure 2. EIP Curriculum
8. Performance Evaluation

A comprehensive performance evaluation process is in place at EIP, with data collection underway for this inaugural class of students in the program. Full details of this system and early results, including an entrepreneurial mindset measure involving longitudinal analysis, will be discussed in a subsequent research paper for 2013.

At this early stage of the program, performance measures are limited to student satisfaction surveys and course evaluations. Students take a Student Satisfaction Survey at the end of both their first and second years. Summary results from the spring 2011 Student Satisfaction Survey are presented in Table 1.

The results indicate students are satisfied with the program and are benefitting from participating, with 98 percent “agreeing” or “strongly agreeing” and none “disagreeing” or “strongly disagreeing” with the statement “I would recommend EIP to other students interested in an entrepreneurial experience on campus.” Students recognized the value of living in proximity to other EIP participants as a key element of the program, as evidenced by 79 percent of survey respondents “strongly agreeing” or “agreeing” with the statement, “Living alongside fellow EIP students is a critical element of the program.”

<table>
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<tr>
<th>Question</th>
<th>Mean</th>
<th>Median</th>
<th>Mode</th>
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<tbody>
<tr>
<td><strong>Overall Experience</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I would recommend EIP to other students interested in an entrepreneurial experience on campus.</td>
<td>2.0</td>
<td>2</td>
<td>2</td>
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<tr>
<td>EIP helped me to achieve my personal goals.</td>
<td>1.6</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Coaching/Mentoring Experience</strong></td>
<td></td>
<td></td>
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<tr>
<td>The quality of new venture coaching that I receive from the Program Director meets my expectations.</td>
<td>2.2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>The quality of personal and career mentoring that I receive from the Program Director meets my expectations.</td>
<td>2.2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td><strong>Living Experience</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Living alongside fellow EIP is a critical element of the program.</td>
<td>2.0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I expect lifelong friendships with fellow EIP students.</td>
<td>1.7</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>I discuss entrepreneurial topics including new venture ideas with my roommates.</td>
<td>2.5</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>I discuss entrepreneurial topics including new venture ideas with other EIP beyond my roommates.</td>
<td>2.0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>There is a high level of interaction across ethnically and religiously diverse students in EIP.</td>
<td>1.8</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>My social activities outside of the EIP, such as movies and sports, include other EIP students.</td>
<td>2.0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Average of the three areas</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>2.1</td>
<td>2</td>
<td>1.7</td>
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In response to the 2011 annual report of EIP to the University’s Provost’s Commitment on Living-Learning Program, the program was recognized for “a very successful first year, recruiting
excellent students and providing instruction that was well received by its students.” Further comments included that “the program includes a well-structured set of courses which include relevant activities and experiences.” Also, retention rates were noted as high in comparison with other living-learning programs on campus.

9. Conclusion

The Entrepreneurship and Innovation Program for Honors College freshmen and sophomores was successfully launched in 2010. In its launch, the program benefitted from the support of both Honors College and Mtech, which designed the program. Students who populated the program were among the most academically talented students in the university and overwhelmingly reported satisfaction with the program. EIP is committed to continuous improvement and to the success of its students.

In close collaboration with the Honors College and Resident Life, Mtech is committed to undergraduate entrepreneurship education as part of its venture creation and education mission, is experienced in developing similar programs including Hinman CEOs and Hillman Entrepreneurs, and has introduced a host of successful, innovative undergraduate entrepreneurship courses, competitions, and activities. The new EIP living-learning entrepreneurship experience for freshmen and sophomores is improving student recruitment, enhancing student enrichment, and contributing to the overall quality and rankings of the University of Maryland.

References

Green, J.V., & Morris, M.H. (2011). Launching and leading a living-learning program (LLP) for student entrepreneurs. Academy of Management Annual Meeting, San Antonio, TX.