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| Proposed Improvement to Engagement of Inovativity on the OSU-Corvallis Campus  —A peak into increasing student entrepreneurship at OSU  Prepared for Mr. Jacky Chan, OSU Special Projects Office  Submitted by Lyon Kee  Submitted on Wednesday, November 8, 2023  Wr227z fall term 2023 section 4 |
| **ABSTRACT**  The scope of the following Investigative Research Project (IRP) Report is limited to research activities undertaken in Wr227z Technical Writing during fall term 2023. Activities included a four-phase methodology consisting of brainstorming among peers, web and OSU library research, and personal  observation and other information exchanges. The outcomes of the proposed activity are detailed in the report’s discussion, stating that raising awareness of an entrepreneur-like student experience would foster students for the world. Finally, this report proposes methods for the school of entrepreneurship to execute to elevate student experience around campus. A university that has high innovation and students that are entrepreneur minded would help to create an ecosystem within and around OSU, bringing great minds and ideas into a new tech hub for the world. The progress would be constantly monitored and publicized on the entrepreneurship and the student experiences & Engagement website. |

**INTRODUCTION**

***The mission of OSU’s Undergraduate IRP (Investigative Research Project) Initiative is to identify educational opportunities for students through project management.*** *Projects recommended through the 2023 IRP Initiative must focus on “improvements to the student experience at Oregon State University in Corvallis.” IRP Reports must be prepared specifically for Mr. Jacky Chan of the OSU Special Projects Office, 640A Kerr Administration Building, Corvallis, OR 97311. To be considered for project implementation during the 2024 calendar year—student IRP Reports should be submitted before the deadline of Wed08Nov2023 at 11:59 PM.*

***All submitted IRP Reports should limit the scope of their recommendations to pilot projects with a budget of $5,000 or less.*** *All IRP Reports must include evidence of preliminary research that supports both educational opportunities and improvements to the OSU-Corvallis, -Newport, -Bend or online campus. It is understood that the preliminary research that supports all IRP recommendations will be based on Wr327 class activities that include brainstorming among peers, cited web research, cited OSU library research, and personal observations/information exchanges, which may include informal interviews, conversations, online blogs, or other forms of social networking.*

**Student Introduction**: Lyon Kee, a senior at Oregon State University, majoring in Computer Science. With my Investigative Research Project (IRP) Report, I aim to delve into the vital issue of enhancing student innovation opportunities at our institution.

Oregon State University boasts a thriving community of over 11,000 engineering students, who, over the course of their academic journey, generate a plethora of innovative ideas. However, the concern lies in the apparent lack of innovative projects permeating the campus landscape. While notable projects like the space rover and Global Formula Racing exist, their limited promotion and accessibility create a barrier to broader student participation. These projects often remain within specific departments or circles, leaving other students unaware of their existence, let alone how to get involved.

In contrast, numerous world-leading innovation ecosystems have emerged in different regions. Notably, Silicon Valley has become the epicenter of global innovation, housing tech giants and startups alike. The key driver behind these innovation hubs is the creation of entrepreneurial ecosystems that provide fertile ground for turning ideas into tangible innovations. An inspiring example of such an entrepreneurial ecosystem can be found at Stanford University, situated in the heart of the Bay Area, which has played a significant role in shaping the success of Silicon Valley. Stanford's approach to fostering innovation has had a substantial impact on the rise of this global innovation hub, generating innovative ideas that have left an indelible mark on the world.

Therefore, I propose a pilot project that requires active engagement and collaboration from the faculty, notably involving the Student Experience Center. This initiative aims to raise awareness about innovation opportunities throughout the campus and encourage students to take part. The core strength of this proposal lies in its cost-effectiveness. It primarily relies on incentives and making the most of existing resources, requiring minimal additional expenses. The intended impact is to engage every club, individual, and group with an interest in entrepreneurship. The goal is to make this improvement initiative a reality, not in the distant future, but during the academic year of 2024, ensuring that innovation opportunities are accessible to every student at OSU.

***The Methodology, Results, Discussion, and Conclusion sections that follow describe the basic research undertaken for this report.*** *Further information in the form of a Formal Project Proposal may be requested.*

**Methodology**

**Phase 1: IRP Brainstorming--Document/Discuss/Peer Review Activity**

**1.** **Individual Exercise: Summarize your exploration of web sites related to your chosen topic and how you might apply this topic to suggest an improvement to the student experience at OSU**. The world thrives on innovation, and OSU is committed to nurturing it in students. Institutions like Stanford have successful programs helping students raise significant funding. ASU, a consistent innovator, offers insights into fostering innovation across faculty, courses, and technology on a global scale. This exploration can inform improvements to the student experience at OSU.

**2. Individual Exercise: Reflect on your personal experiences related to the need for such an improvement at OSU**. I've wanted to start a purpose-driven startup but lacked resources. A lack of awareness about student entrepreneur programs on a campus of 40,000 students hinders bright ideas from coming to life.

**3. Group Exercise: Brainstorm within your group/among your peers, discussing the improvement you might recommend ($5K Pilot Project)—an improvement to the student experience at OSU. Document this discussion.** During brainstorming, we discussed the benefits of student-run projects at the university. These projects offer invaluable experiential learning opportunities for developing entrepreneurial skills that can't be taught conventionally.

**Phase 2: Web Search of OSU-applicable Topic Options**

**4. Individual Exercise: Conduct a web search for sites that help to describe your ideas for food waste solutions that would be applied at OSU. Document your search criteria.**

Conducted Google searches: universities that support student startups.

The Stanford Daily: A new student’s guide to Stanford’s entrepreneurial ecosystem

**5. Individual Exercise: Identify a Short List of Two Relevant Web Sites—by topic and include the URL.** Stanford's approach to building an entrepreneurship and innovation ecosystem can be explored in two articles on the Stanford Daily website: "Part 1" and "Part 2". Additionally, the URL "https://www.inc.com/nate-klemp/google-encourages-employees-to-take-time-off-to-be-creative-heres-how-you-can-too-without-sacrificing-outcomes.html" discusses fostering creativity without compromising work productivity.

**6. Individual Exercise: Summarize the content of both web sites.** Big corporations, including Google, encourage employees to allocate time for creativity, though sometimes this is misused for leisure and distraction. Creating the right environment for creativity is crucial. Some companies offer innovative time off to support creative development aligned with their goals. Stanford fosters a culture valuing experimentation, not just business creation, and supports numerous student-led initiatives and incubators. Collaboration between faculty and students can enhance startup development.

**Phase 3: OSU Library Online Search—conduct a search for reference materials related to your IRP topic**

**7. Individual Exercise: Identify search methods—document search criteria used.** Searched OSU Library using this search phrase: “improving student innovation”

**8. Individual Exercise: Identify a short list of two relevant sources.** Found: 1) Article: “Improving the innovation ability of engineering students: a Science and Technology Innovation Community organisation network analysis”; 2) Article: “A Talent Cultivation Model for Improving the Innovation Ability of College Students in Scientific Research”

**9. Individual Exercise: Summarize additional source searches.** On amazon, there are not much books about student innovation/entrepreneurship, but found a book for teen entrepreneurship “Teen Entrepreneurship: The #1 Book for Teenage Entrepreneurs”.

**Phase 4: Personal Observation/ Information Exchanges**

**10. Individual Exercise: From memory, web-views, or personal interviews/discussions, make a short list of 5 OSU-topic-related observations—these may also suggest options for further inquiries related to your topic.**

1) OSU's InnovationX has seen success but lacks consistency and an updated website after a $10,000 prize competition. 2) OSU's startup and idea sparking programs lack visibility, requiring students to dig deep into university resources to discover them. 3) Limited news highlights OSU's support for students, but a group dedicated to student innovation regularly hosts events. 4) Raising funds remains a significant challenge for small businesses, but university connections can streamline the process for thriving business ideas. 5) OSU boasts world-renowned researchers who, with proper planning, can facilitate the realization of student ideas.

**11. Individual Exercise: Make a short list of 5 interview questions related to your topic.**

1) Have you heard about the innovative scholarship/programs at OSU?

2) Have you ever had a business idea that you think would succeed but never had to opportunity to idealize and develop it?

3) Do you lack connections that OSU have that could prove useful for you in your career?

4) How much do you know about the innovative ideas that are going on around OSU?

5) How much, in your opinion, do classes push students to be innovative?

**12. Individual/Group Exercise: Brainstorm/Document options for OSU improvements within a $5K budget.** We could start an ecosystem within OSU that promotes innovative ideas. We could have faculty talk to students and approach students in clubs and so on to push and strive to start projects and create innovative ideas as a competition that is evaluated at the end of the school year. These clubs are also required to talk to a mentor about their plan and progress and most importantly seek help from them.

**Results**

**Phase 1: IRP Brainstorming**

In the dynamic environment of higher education, the incubation of innovative ideas presents a unique challenge. While the term "innovation" is easily defined, its practical realization demands a fertile ground that extends beyond traditional classrooms. Oregon State University (OSU) stands at the precipice of a transformative era, where the nurturing of ideas into tangible projects requires thoughtful consideration. The first phase of our research proposal involves conducting a cost-effective survey on the campus to estimate the current level of innovation at OSU. Allocating a budget of $1000 for this purpose ensures the efficient utilization of resources without unnecessary expenditure. This survey aims not only to quantify innovation but also to identify pockets of creativity and potential areas for improvement. The remaining funds from this phase could be strategically directed towards supporting student-led programs that focus on fostering small-scale innovative ideas. This initiative, designed to occur across various corners of the campus, aims to instill a culture of creativity and entrepreneurship.

**Phase 2: Web Search of OSU Topic Options**

In our exploration of OSU's entrepreneurial landscape through a web search, we uncovered parallels with Stanford's robust ecosystem, yet identified crucial gaps. As a student at Stanford states, “They’re very good at helping you de-risk your idea in the early stages — like how do you know your idea has merit? How do you know there’s a market for your idea? And they help you go even beyond just customer interviews.” This insight highlights a significant disparity, as OSU has not witnessed comparable responses from hosts and students associated with OSU’s InnovationX. The proposed $5000 budget serves as a strategic catalyst to initiate transformative change. Unlike Stanford, which boasts over 60 entrepreneurial groups for its 16,000 students, OSU, with its larger student body of 35,000, sustains only 17 clubs. This stark contrast underscores the need for a more expansive and inclusive approach to entrepreneurship at OSU. The emphasis is not only on quantity but on the qualitative aspects of support, mirroring Stanford's success in actively de-risking ideas, offering mentorship, and providing a network of professionals. By strategically allocating the proposed budget to initiatives such as mentorship programs, risk assessment workshops, and events facilitating industry interaction, OSU can lay the foundation for a more vibrant and interconnected entrepreneurial community. The goal is not immediate comprehensive development but a pivotal starting point that can stimulate future investments and sustainable growth in the entrepreneurial landscape at OSU. For a visual comparison of the entrepreneurial ecosystems, refer to <https://cardinalventures.notion.site/Stanford-s-Entrepreneurship-Ecosystem-aef1005e162d4658887fee4911758201>.

**Phase 3: OSU Library Search**

In our exploration of OSU's Library resources, an academic journal managed by the Monterrey Institute of Technology and Higher Education (ITESM) in Mexico yielded insightful findings on the advantages of fostering entrepreneurial ecosystems within universities. The journal titled “Entrepreneurial university ecosystems and graduates' career patterns: do entrepreneurship education programs and university business incubators matter?” concluded that such ecosystems significantly influence graduates' career choices. Graduates exposed to entrepreneurial programs and business incubation initiatives tend to exhibit enhanced skills, reduced aversion to effort and risk, and a preference for self-employment or academic entrepreneurship. The benefits extend beyond career choices, encompassing the development of a mindset conducive to creative thinking, risk assessment, and workload tolerance. These programs effectively reduce barriers to entry for startups and equip graduates with the skills to identify business opportunities from unique technologies. The study underscores the potential for OSU to not only influence career trajectories but also instill valuable entrepreneurial attributes, creating a workforce with a heightened capacity for innovation, risk-taking, and creative problem-solving.

**Phase 4: Personal Observation/ Information Exchanges**

Currently, OSU's entrepreneurial landscape is predominantly situated within the College of Business, operating primarily through various affiliated clubs. These include finance, human resources, retail, diversity, business analytics, sororities, fraternities, etc., positioning entrepreneurship as a business extension. However, there exists a significant untapped potential within the College of Engineering. This college is a hub for generating unique technologies that could be revolutionized and marketed through unconventional avenues, diverging from traditional sales techniques. By extending the entrepreneurial scope to the College of Engineering, OSU could harness the innovative prowess inherent in the production of cutting-edge technologies. This expansion would not only enrich the entrepreneurial ecosystem at OSU but also bridge the gap between technology development and commercialization. It aligns with the evolving landscape of business where interdisciplinary collaboration is increasingly essential. Incorporating entrepreneurship within the College of Engineering could foster a dynamic environment where students learn to merge technological ingenuity with strategic business acumen. This shift would not only broaden the scope of entrepreneurial activities but also foster cross-disciplinary collaboration, a crucial aspect of the contemporary business landscape. To realize this vision, strategic collaborations and resource allocation are imperative to create a symbiotic relationship between technology-driven innovation and entrepreneurial acumen, further positioning OSU as a hub for comprehensive and collaborative entrepreneurship.

**Discussion**

Drawing on extensive research aimed at enriching innovation among OSU students and fostering a community that thrives on entrepreneurial experiences (Guerrero, 2020), our proposal centers on amplifying innovative activities across campus. By infusing innovative thinking into the student body, we anticipate a transformative shift, reducing aversion to work effort and risk, preparing students for the industry, and imparting invaluable life lessons beyond traditional classrooms.

Stanford University serves as a beacon with its robust entrepreneurial ecosystem boasting 60 clubs, classes, groups, resources, and programs for 16,000 students (Cardinal Ventures, 2023). Notably, the "Most Innovative Universities" ranking by the US News & World Report, dominated by Arizona State University, underscores the impact of innovative projects within faculties and among students (US News & World Report, 2023). Stanford's success, contributing to Silicon Valley's rise as a tech hub, underscores the pivotal role of entrepreneurship in propelling technological advancements (Ling, 2021).

There are a total of 17 clubs involved in entrepreneur practices consisting mostly of business clubs for 35,000 students in OSU with an entrepreneurial center located within the College of Business(STUDENT CLUBS & ORGANIZATIONS, 2023). We observe that these 17 clubs that are available in OSU mainly consists of ties to the College of Business. These clubs are what disincentivizes students in the engineering department to reach out and learn more about the entrepreneurial process because they are unable to partake in discussions that are based about business concepts. An engineering environment is crucial when we are attempting to include more engineers in innovation.

As an educational boost for OSU—and as a perfect way to incorporate innovative explorations across campus—we are proposing two activities that can be implemented in multiple ways over different layers of students and employee of OSU over the school year of 2023 – 2024:

* **Option 1: Engineering Club Innovation Competition**

Expand the Engineering Club Innovation Competition by promoting interdisciplinary collaboration. Encourage clubs to form diverse teams, fostering cross-disciplinary exchange. Allocate funds not just as a prize but also as seed money for promising ideas, empowering winning clubs to prototype and potentially launch projects. This approach not only incentivizes participation but also establishes a culture of innovation that transcends departmental boundaries, catalyzing a broader impact across the university.

* **Option 2: Revitalizing the Shark Tank Program**

Restart the shark tank program that OSU initially ran back in 2022 with a winner. Include enough ability for this program to raise awareness among the students of OSU and make it easily accessible for most people that only have ideas and not just appeal to those that have already started on their journey. OSU as a whole has a student count of over 35,000 which is home to many bright ideas, but we need a method to foster and encourage creativity.

A person pointing at a screen

Description automatically generatedA group of people sitting in a lecture hall

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Engineering Collaboration: Depicts a group of engineering students collaborating on a project, transforming a machinery idea into a tangible product. A mentor provides insights, fostering a dynamic learning environment.

Pitching for Funding: Illustrates students pitching ideas to secure funding in a competition setting, akin to Shark Tank. This image showcases the vibrancy of entrepreneurial spirit and the potential for innovation at OSU.

**Conclusion (with Recommendations)**

In envisioning a more innovative campus, we propose a competition among engineering clubs at OSU, themed as "the most innovative club," with a $5,000 prize pool. This initiative taps into the existing strengths of these clubs, leveraging their manpower and fostering an environment where groundbreaking ideas can materialize. As multiple clubs vie for top honors, the ensuing publicity will galvanize the entire campus, attracting newcomers and igniting a culture of innovation. The potential impact is immense, reminiscent of the entrepreneurial ecosystem that propelled Silicon Valley through Stanford's initiatives.

Option #1 aligns with the ethos of challenging minds beyond classrooms. By incentivizing students to push their limits and strive for success, the campus transforms into a dynamic hub of diverse prototypes and ideas. The pilot project’s budget, while flexible, emphasizes awards for the most innovative contributions, ensuring sustained motivation. Option 1, emphasizing broader competition ease of entry, contrasts with Option 2, which meticulously nurtures ideas from inception to marketing, providing a detailed path to success for aspiring entrepreneurs.

Both options offer invaluable experiences beyond traditional classrooms. While Option 1 instigates a global sense of entrepreneurship, Option 2 delves deeper into the entrepreneurial journey. The competitive nature of the initiative ensures participants not only vie for the prize pool but also gain a platform to showcase their innovative ideas to the world. As students and clubs engage in this transformative competition, they not only stand a chance to win financial rewards but also contribute to the rich tapestry of entrepreneurial culture on our campus. The implementation of either option promises a vibrant, forward-thinking campus that fosters creativity, ambition, and a spirit of entrepreneurship among its diverse student body.

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