

# **Fifth Year Scholar Project: Executive Summary**

Joyce Wang, 01/07/2019

At the core of this Fifth Year Scholar Project is the belief that our community can be stronger if we step out of our academic silos and learn to understand how each other think. For a modern institution like Carnegie Mellon, interdisciplinary research and education not only lead to more innovation, but also play an instrumental role for the personal and professional development of students. At CMU, students from undergraduate to PhD levels are interested in knowledge and skillsets beyond the confines of traditional disciplines, which can be seen through the popularity of programs such as the Human-Computer Interaction secondary major and the newly established undergraduate degree in Artificial Intelligence. Interdisciplinarity is also becoming a necessity in certain emerging fields for educating conscientious industry professionals and scholars. The Artificial Intelligence undergraduate curriculum, for example, includes learning requirements in ethics and the social sciences, with the goal of preparing students to become responsible individuals who understand the social implications of their work.

Carnegie Mellon University is a unique institution that combines talent and resources across engineering, sciences, humanities, and the arts. It has a dynamic, diverse, and innovative intellectual environment. However, a large part of the student population are siloed within their academic disciplines. In order for students to fully utilize available academic resources on campus and respond to their curiosity and goals, adequate institutional support and deliberate facilitation are much needed. At the moment, interdisciplinary resources are only readily accessible to small groups of students. Established interdisciplinary majors and courses also have much room for improvement in their curriculum design and quality.

The goal of this project is to help cultivate an environment that gives undergraduate students the freedom and support to explore their curiosity and expand their academic experiences. The reason for focusing on the undergraduate experience is that based on initial assessment, undergraduate students have the most trouble accessing interdisciplinary resources, in comparison to faculty and graduate students who more frequently engage with interdisciplinary research and courses. The strategy of this project is two-fold: 1) ignite interests within the student body to explore across disciplines, and 2) improve the cross-departmental support system for students looking for a more interdisciplinary undergraduate experience. The vision is a CMU experience where students can easily access educational resources across disciplines, immerse in an intellectually diverse and

inclusive environment of faculty, staff, and peers, and leave campus with an excited and open mind for future growth.

The execution of the project is divided into two parts. Part one (spring 2019) focuses on using research methods to assess the current state of interdisciplinary education at Carnegie Mellon—*how did the current interdisciplinary environment at CMU come into being? What is the existing support system for students with interdisciplinary interests? Why/why not are undergraduate students seeking out interdisciplinary resources?* Based on the problems identified in Part one, Part two focuses on taking actions given the strategies described above—organizing events to encourage undergraduate students explore outside their own majors, and working with faculty and staff to enhance cross-departmental support for students.

## **Part one: Research and Assessment (Spring 2019)**

### ***Goal***

- identify specific problems that inhibit undergraduate students' interdisciplinary experience
- design plan of actions to address issues relating to the lack of interdisciplinary freedom and support
- connect with potential campus partners in the execution of this project

### ***Methods***

- develop a well-informed understanding of the current institutional structure that supports interdisciplinary research and education
- archival research on how current interdisciplinary structures at CMU came into being
- interview undergraduate students, graduate students, faculty, and staff with interdisciplinary experience (studying and/or teaching)
- create a baseline evaluation to compare against future improvement and design measurement of success
- consolidate results of research and plan of actions in a written report

### ***Result and Presentation***

- The Vice Provost for Education as audience:
  - recommendations for better cross-departmental support system for students looking for interdisciplinary resources
  - written report summarizing the assessment on existing interdisciplinary structures
  - plan of actions
- Academic advisors as audience:
  - recommendations for better cross-departmental support system for

- students looking for interdisciplinary resources
  - document with all existing interdisciplinary resources on campus (printed or in the form of a pdf)
- Students as audience:
  - physical exhibition/fair (possibly in the CUC) showcasing the evolution of the interdisciplinary structure at CMU
  - document with all existing interdisciplinary resources on campus (printed or in the form of a pdf)

## **Part two: Actions (Fall 2019-Spring 2020)**

### ***Goal***

- ignite interests within the student body to explore across disciplines
- improve the cross-departmental support system for students looking for a more interdisciplinary undergraduate experience
- make sustainability plan for the project

### ***Methods***

- based on the findings in Part one, iteratively design and organize gatherings (like the following two examples)
  - “hackathons” where students are asked to form interdisciplinary teams and generate ideas and projects
  - faculty joint talks where two professors from different departments are asked to give a 10-min talk together
  - draw inspirations from other higher-ed institutions
- make evaluations on student interest and involvement in interdisciplinary exploration; and their accessibility to interdisciplinary resources
- collaborate with academic advisors to facilitate better experiences with cross-registration

### ***Results and Presentation***

- University leadership as audience
  - evaluation of how successful the gatherings were in increasing students’ motivation in interdisciplinary studies and connecting students of different disciplines
  - report on the improved cross-departmental support system
- The establishment of a board of student, faculty, and staff dedicated to maintaining the cross-departmental support system

In the fall 2018 semester, my work mostly consisted of archival research and conducting interviews with individuals on campus with experience in

interdisciplinary education.

- Archival research with help from Katherine Barberra and Julia Corrin (reading through sources such as old course catalogues and annual President's reports)
- Discussion with Prof. Meagan Rivera about a research study on diversity that the IRB performed on the School of Drama last year, and the subsequent community dialogues that Prof. Rivera helped organize to address problems surfaced through the research (I am interested in the format of research-based community actions)
- Reading education research-related papers such as “Ethics Education in Context: A Case Study of Novel Ethics Activities for the CS Classroom” written by Michael Skirpan, special faculty in the Department of Philosophy (I am interested in learning ways to measure progress)
- Discussion with Carrie Hagan (project advisor) on collaborating with academic advisors across campus

I will continue to document my progress on <https://github.com/joyceexinyiwang/FYS>.