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Board 274: Engineering Students Definitions of and Perceptions of Entrepreneurial Failure

Dr. Thomas M. Katona, California Polytechnic State University, San Luis Obispo

Thomas Katona is an Assistant Professor of Innovation and Entrepreneurship at the California Polytechnic State University in San Luis Obispo (Cal Poly). He works in the Biomedical Engineering Department and has a joint appointment in the Orfalea College of Business.

Dr. Sarah E. Zappe, Pennsylvania State University

Dr. Sarah Zappe is Director of the Leonhard Center for the Enhancement of Engineering Education and Assistant Dean of Teaching and Learning at Penn State. She holds a doctoral degree in educational psychology emphasizing applied measurement.

Cade Robert Creason, California Polytechnic State University, San Luis Obispo

Cade Creason is a Research Assistant of Innovation and Entrepreneurship at the California Polytechnic State University in San Luis Obispo (Cal Poly). He received a bachelor's degree in psychology and ethnic studies with a minor in entrepreneurship, in addition to studying international marketing at Chiang Mai University in Thailand. He co-founded a luxury adventure travel start-up and works as a Senior Consultant for the Mustang Consulting firm. He is interested in entrepreneurial identity, teamwork behavior, and negotiation strategy.

Definitions of Failure from Students in No-longer Existing Ventures

Abstract:

This paper focuses on how former collegiate student entrepreneurs define failure and compares their definitions with how academic literature has traditionally defined entrepreneurial failure. The article examines the context by which collegiate student entrepreneurs, and more specifically student entrepreneurs who studied an engineering discipline, start their venture, and how that influences their perceptions of what entrepreneurial failure is.

Entrepreneurial failure and its importance to the field of entrepreneurship is discussed almost as frequently as entrepreneurial success. In fact, learning from failure and learning to fail quickly as a means to assist in advancing toward success are often discussed as fundamental key attributes of successful entrepreneurs. Despite this, factors that influence and contribute to entrepreneurial success and how to increase entrepreneurial success through support mechanisms are far more understood than methods that would help support entrepreneurs in learning from failure, or finding ways to fail early and often in a way that helps them as opposed to discouraging or demoralizing them. Given the rapid increase and interest within colleges of engineering in introducing and exposing students to entrepreneurial experiences, and also in developing programs that help students start entrepreneurial ventures, it is timely to better understand the experiences of these student entrepreneurs, particularly the largest percentage of them who started ventures that failed.

While the importance of learning from failure is often repeated in the literature, this paper highlights distinct differences between how collegiate entrepreneurs define failure, compared with more traditionally researched non-collegiate entrepreneurs, and also outlines how the various contexts by which students become involved in an entrepreneurial endeavor influences their perception of how failure is defined.

Keywords: Entrepreneurship, Failure, Entrepreneurship Education, Student Entrepreneur

Introduction:

Entrepreneurial education has been rapidly expanding within universities over the past 15-20 years with colleges of engineering being amongst the most active participants in embedding entrepreneurship into curricular and cocurricular activities [1]. Well-developed and theoretically grounded educational interventions have been shown to increase entrepreneurial skills and perception among students [1] - [4]. Organizations including the National Science Foundation through the Lean Launch Curriculum and I-Corps program, VentureWell through curriculum development grants and their E-Team program, and the Kern Family Foundation through the Kern Entrepreneurial Education Network (KEEN) have provided significant funding to embed

and transform entrepreneurial teaching and practice into colleges of engineering [5] - [7]. This activity combines with an added emphasis among engineering programs to develop an entrepreneurial mindset among their engineering students with the belief that this will lead to them being more productive and innovative whether their career path leads them into established industry (becoming "intrapreneurs") or later as entrepreneurs.

While this trend toward developing more entrepreneurially minded engineering students is supported by global economic trends and a rapidly changing work environment, one factor has been largely overlooked in this process. Statistically, most entrepreneurial ventures fail, with disproportionately large value being created from a minority of entrepreneurial endeavors [8]. Given this fact, until we find ways to drastically increase the success rate of entrepreneurial ventures, as we increase engineering students' exposure to entrepreneurship, we are also increasing their exposure to failure very early in their careers. With this exposure, it is unknown whether sufficient preparation and education around project/venture failure is occurring to properly equip entrepreneurially minded engineering students to learn and grow from entrepreneurial failure. In fact, previous work has shown that little is done to help students prepare for and respond to entrepreneurial failure beyond some isolated and relatively cursory classroom activities [9]. It's also not clear that these relatively young entrepreneurs define and perceive failure in the same context as is traditionally described in entrepreneurial literature.

The purpose of this paper is to provide an overview of a National Science Foundation (NSF)-funded project studying the failure experiences of engineering students who worked on a venture during their collegiate experience. This project, funded through the Research Initiation in Engineering Formation (RIEF) program at NSF, intends to explore four research questions:

> RQ1: What are the different types of entrepreneurial failures that students working on ventures experience?

> RQ2: What are the different ways that students who experience entrepreneurial failure respond (i.e. identification of adaptive and maladaptive post-failure responses)?

> RQ3: What are the different factors or events that lead students who experience entrepreneurial failure to exhibit adaptive or maladaptive responses (pre-failure dispositions)?

> RQ4: What educational methods do student entrepreneurs report receiving to help them prepare for and respond to entrepreneurial failure?

For this paper, we present preliminary findings of the overall qualitative study, focusing on how students define entrepreneurial failure. In this work, we look to understand how engineering students who started entrepreneurial ventures while affiliated with their university define failure and their perceptions of failures that they experienced throughout their entrepreneurial journey. Our preliminary research has shown that how students define failure and their expectations or

goals for the venture have an impact on their perceptions of any failure experiences they have in their venture.

Review of failure definitions in the literature:

If entrepreneurs are expected to learn from failure, fail fast, and/or fail forward on their path toward becoming successful entrepreneurs, it's important to understand what exactly is meant by entrepreneurial failure. While there isn't a uniform definition for entrepreneurial failure, it's clear that common definitions of entrepreneurial failure tend to focus on the entrepreneurial venture failing, meaning that the venture ceases operation or becomes financially unsustainable.

For instance, bankruptcy is a frequently used failure definition explained as the loss of financial capital that ceases operations ultimately causing a business to fail [10] - [13]. Bankruptcy creates a clear line of delineation which makes for a consistent and distinguishable definition [14] - [17]. Similar to bankruptcy, failure has also been tied to financial viability of a business wherein "Business failure occurs when a fall in revenues and/or a rise in expenses are of such a magnitude that the firm becomes insolvent and is unable to attract new debt or equity funding; consequently, it cannot continue to operate under the current ownership and management." [18] or based on "the market" where the test of failure is if revenues sufficiently exceed costs to make the business attractive to continue [19]. These latter definitions, while potentially correlated with a bankruptcy event, are tied to a spectrum of periods when an entrepreneur may recognize that the venture is failing and either needs to cease operations or undergo a significant change from the entrepreneur's original intentions which may include finding someone else to run the venture, or liquidation of the assets for example. Bankruptcy is distinguished from the "discontinuance" of a business when an entrepreneur decides to exit or close their own venture [20] - [24]. Ucbasaran [25] defines failure as closing down or discontinuing a business because the venture failed to meet the expectations of the entrepreneur which clearly leaves many scenarios for why a business may be discontinued beyond bankruptcy. Many people see the failure of a venture as both bankruptcy and dissolution. It's important to note the distinction between discontinuance of a business which may be an active choice of the entrepreneur, whereas dissolution due to bankruptcy or exhausted funds may be an action taken out of necessity as opposed to being a choice. Others have discussed entrepreneurial failure as failure events in the entrepreneur's journey where they face major setbacks, as opposed to linking failure to a culminating decision for the business [26].

Entrepreneurial failure definitions must also be dissociated from the repercussions of failure, such as social stigma and emotional risks, that may result from an entrepreneurial failure, but are not typically defined as the failure event [13], [20], [27] - [32]. The failure event itself is also distinguished here from a potential precondition of "fear of failure" and "risk avoidance" which is also referenced in entrepreneurial literature [33] - [35].

Lastly, there is a large body of research on failure, particularly around failure of university student entrepreneurs, that does not provide an explicit definition of what failure is. This could be done either to encompass and describe a range of types of failure that these individuals may encounter and generalize the findings across these experiences, or because it's not yet clear which types of failure experiences are most applicable to any given research finding [36] -[39].

Table 1 summarizes the range of terminology or categories of entrepreneurial failure that are described above with the associated definition for each.

Failure Terminology or Category	Definition
Bankruptcy	Loss of financial capital that ceases operations ultimately causing a business to fail
Financial Viability	Fall in revenues and/or a rise in expenses are of such a magnitude that the firm becomes insolvent and is unable to attract new debt or equity funding
Market Based	If revenue does not sufficiently exceed costs
Business Discontinuance	Exiting or closing the business
	Closing a business because it didn't meet the expectations of the entrepreneur
Failure Events	Facing major setbacks
General Use of or Discussion of Failure	No Explicit Definition Provided

Table 1: Summary of terminology and definitions of entrepreneurial failure

As we examine these different definitions of entrepreneurial failure we note that for the vast majority of terminology that links the failure to the failure of the business or venture, the assumption is that the entrepreneur has legally formed a business. For student entrepreneurs, however, it is not uncommon for their "ventures" to not reach the point of legal business formation, even for those that work on the venture for extended periods of time (many months to years) and receive capital through awards, grants, or from family and friends that don't require legal formation. Many students that are referred to both by their university and through self-identification as student entrepreneurs, delay legal business formation until the time that they are ready to raise external investment capital to save money, focus their efforts on activities that are

important for building a business, and to avoid legal obligations that come with forming a legal entity among other reasons. Therefore, this fact alone would lead one to suspect that some student entrepreneurs may define entrepreneurial failure in ways that are not directly linked to a business closure event.

Methods:

For this overall research study, we will conduct a phenomenographical study of engineering students' experiences with failure in an entrepreneurial context. As described by Marton [40], the purpose of phenomenography is to understand the different ways that people experience something or think about something [40], in this case entrepreneurial failure. Using analysis of semi-structured interviews, for the overall study, we will attempt to identify the "critical features" of failure that engineering students are aware of and how it relates to their pre-failure experiences and post-failure responses. For this portion of the study, we focus only on the interviewee's definitions of failure and strive to determine reasons for the different ways that failure is defined.

Positionality:

The authors of this paper are:

A mid-career white male with a Ph.D. in Electrical and Computer Engineering and M.B.A. who holds a position as an Associate Professor in Innovation & Entrepreneurship in the College of Engineering at a state university in California.

A mid-career white female with a Ph.D. in Educational Psychology specializing in applied testing and measurement who holds a position as the Director of a Center for Engineering Education and Assistant Dean for Teaching and Learning in the College of Engineering at a state university in Pennsylvania.

A white male undergraduate student at a state university in California who is studying Psychology and Ethnic Studies with a minor in Entrepreneurship.

We acknowledge that our own personal backgrounds likely impacted the interpretation of the data collected in this study.

Participants:

The criteria for the interviewees were that they had to have started a technology-based company either during or immediately after their undergraduate or graduate career and whose ventures ceased operation without selling the venture or achieving a traditional "exit" event. All interviewees studied engineering or a related field in technology development. All teams must have received at least $5,000 for their venture, through a variety of sources such as competitions,

grants, or investment. Participants were recruited through various sources, including connections with VentureWell, winners identified for different entrepreneurship related student competitions, and snowball recruiting, in which interviewees identified others who might fit the study criteria. As of the submission of this paper, a total of 16 interviews have been conducted. Interviewees received a gift card of $40 as an incentive to participate.

Data Collection:

A total of 16 interviews were conducted over Zoom. Prior to data collection, participants were asked to provide informed consent, using the IRB procedures that had been approved from the first author's institution. All interviews, with the exception of two, were recorded. One was not recorded on the request of the interviewee; the other was not recorded due to technical difficulties. For those not recorded, extensive notes were taken and used in the analysis. A semi-structured interview protocol was utilized, asking questions about the venture, their definitions of failure, and their experiences that they had in the venture with failure. The interviews were transcribed using a paid service.

As this study was focused on student entrepreneur's perceptions of failure, each individual we spoke with was asked the following questions (see the full interview protocol in Appendix A).

- Tell me about how you would define a failure or failures during the entrepreneurial process.
- Tell me about what you perceived to be the biggest failure you experienced during your entrepreneurial journey.
- Tell me about other experiences you had during your entrepreneurial journey that at the time they occurred you perceived to be failures?

These questions allowed each of the study participants to define entrepreneurial failure based on their own experiences as opposed to responding about their experiences based on an externally defined definition of failure.

Data analysis:

The data analysis is still ongoing. However, multiple forms of data analysis have been conducted thus far. First, open-coding has been conducted with two members of the research team, which included the first author and two undergraduate student researchers. The purpose of the open-coding process was to identify major themes and to identify specific passages that relate to the research questions. Second, focused reading discussions were conducted between the first and second authors. Each interview transcript was read and then discussed in order to look for more holistic themes and patterns and to discover narratives for each person regarding their failure experiences in ventures. The first author also wrote memos after completing each interview; these memos were returned-to-frequently during data analysis.

Results:

From the coding process, we found a wide range of how our participants defined failure. Table 2 below shows a summary of the responses to how they would define failure in the entrepreneurial process. Note that some respondents gave more than one definition when asked this question which accounts for the difference between the total number of responses shown in the table and the number of research participants.

Research Participants Definitions of Failure	Count = 21
Business Failing	7
Failure to Learn	4
Not reaching the potential of the venture	4
An assumption that's proven wrong or test that fails	2
Working on something that isn't a problem or need	1
The point at which you move on to something else	1
Having a negative impact on people	1
Not having the mindset that you're doing this to learn	1

Table 2: Definitions of entrepreneurial failure as provided by student entrepreneurs whose ventures are no longer operating.

In the selection process for this study, we inherently used "business failing" as our definition of failure. In other words, our selection criteria required the students to have started a venture that was no longer operating. While we did not explicitly state this, our selection also ensured the ventures had ceased operation as opposed to no longer existing because they had been acquired or achieved some other form of exit event that resulted in the end of the venture. What we found, however, was that while "business failing" was the most common definition of failure provided by the research participants, with close to half the individuals mentioning this, various other definitions of failure in aggregate were more commonly reported. Failure to learn, and not reaching the potential of the venture were two other frequent definitions that multiple participants reported as their definition of failure. From digging deeper into the data, we found that there were multiple factors that impacted their definitions.

Table 2 generalizes 8 categories that respondents definitions were aggregated into and are not verbatim responses. For example,

"*Not building a profitable, sustainable business that you can run*"
&
"*Not being able to get people to give you money for your product or service*"

would both be categorized as "Business Failing" in the table, while

"Not reaching the intended impact of your venture"
&
"anything that we didn't get to do or didn't complete that we could have"

would both be categorized as "Not reaching the potential of the venture".

Three potential reasons emerged for different definitions of failure. These include the type of venture (and whether it specifically relates to social impact), the participants' personal context, and participants' level of commitment to the venture. We discuss these below.

Type of Venture: The participants who defined "not reaching the potential of the venture" as failure were each working on a venture that was designed to have a social impact. Three of the 4 participants had ventures specifically designed around having a social impact in developing communities. While having a social impact and building a business can be entirely consistent with one another, the responses of these participants indicate that for them the potential positive impact of the venture as opposed to financial metrics defined success. Therefore, when the venture did not achieve these impacts they viewed that as failure, rather than the fact they had to cease operations of the venture.

As an example, one participant told us

"In my mind, the fact that it didn't ever scale isn't a failure because it probably shouldn't have ever scaled."... "but recognizing that it wasn't going to do what we expected and intended for it to do on a bigger scale of what would the (anonymized product) actually deliver, and is it directly improving anybody's quality of life? Not necessarily. So I think, kind of on that bigger, philosophical level, that was another aspect."

Relationship to participants' personal context: It was also apparent that not only did our research participants define and perceive entrepreneurial failure in different ways, they also had quite different contexts, goals, and identification with their ventures which influenced their responses. While all of the participants would be identified as young entrepreneurs, or student entrepreneurs by their respective universities, some of them started a legal entity, some worked on their venture as an extended duration project but not a legal entity, and for others the venture did not extend beyond the classroom. Again, each received at least $5,000 in external funding for the venture and there was not a direct correlation between the amount of external funding the venture received and the amount of time the student entrepreneur worked on the venture. For instance, one individual indicated their team had received more than $30,000 while still working

on the venture in the context of a class, but they split up the money received and each moved on to different things once the class was over.

Merriam-Webster's definition for entrepreneur is "one who organizes, manages, and assumes the risks of a business or enterprise". It should be noted that forming a legal entity by definition assumes a level of risk that may not be present in an "enterprise" that does not progress beyond the classroom, but each of the participants did organize, manage, and assume the risks of an "enterprise". The risks associated with an enterprise that does not advance beyond the classroom are much different than the risks associated with a legally formed and operating enterprise. For the former, the primary risk is associated with the grade received which in most cases isn't even correlated to the "success" of the enterprise, although there may be other risks such as risk of perception of failure by others or risk of disappointing the customer population that the student is interacting with. In the latter case, there is financial risk both in potential loss of financial resources, the opportunity cost of not pursuing other employment, social risk from being perceived as failing by others, etc. As an example, one participant said:

"In college, right, we were able to do this with no skin in the game just on the side for fun. So I wouldn't consider it a failure because I learned a lot. We made some money. We had some fun. But if I had graduated and then the business failed post-graduation and I would have given up time or money, I think then I would have considered it a failure."

This compares with someone who legally formed and launched a business who started out by sharing:

"I mean ultimately, I think that the business failed, right. We did not build a profitable, sustainable business that we could run, which is why I'm talking to you guys right now. So in terms of business itself, I think that it was a business failure because we weren't profitable or we didn't have a business model like Tesla or like Amazon where it could be unprofitable for a decade before we became billionaires. But either way, we didn't have money to keep going. So, to me, that's the high-level definition of failure in the business. We did have a lot of successes. We ran out of money and we couldn't sell the product profitably. But I don't think we had a single bad review. The products that we created was (sic) loved by pretty much everyone who bought one once we did convince them to spend a chunk of change with us. And in terms of on a personal level, I don't chalk it up as a failure at all. I wouldn't change a single thing just in terms of what I learned and how I grew over the three years that I did it. So it was a huge personal success in terms of my growth and my journey. But the business failed."

This individual followed up with the following:

"I should have shut it down a heck of a lot earlier. What I was telling myself in the moment was I owe it to myself for all the time that I've invested. I owe it to my investors for the money they've invested. I owe it to my mentors and my coaches, and all the people that have been around me, to try to exhaust every possible avenue to make this successful. That's what I was telling myself when the reality was that the writing was pretty clearly on the wall. And so honestly, I did this for three years. The last six months, I worked like two hours a day of actual real, productive work. I sat on my computer and I'd moved out of (anonymized working location) because I couldn't afford the 400 bucks a month to pay for (anonymized working location). I was working out of the (anonymized company name) warehouse, and they just graciously let me have a free corner in the corner. And I'd go in and I'd sit at my desk for eight hours a day because I felt like I owed it to whoever to do that. And just like looked at, scrolled through Reddit, and did other random stuff. And. I just refused to admit to myself for a really long time that I should just move on. I kind of shot myself in the foot financially. It's about one who would have been-- I would have came out a little less credit card debt had I just wrapped a business up at a better time. ... And I just remember saying to him out loud like, "Dude, I don't do any work, and there's no way that this is going to work." And it was just the first time that I said it out loud. And that was the moment where like a waterfall there was, "Okay, I just need to figure out how to wrap this up."

Level of Commitment to Venture: Table 3 shows the research participants grouped into three different categories based on their intention or level of commitment to the venture and shows the frequency of responses for each definition of failure based on these categorizations. After coding for the participants' definitions, we also categorized each by one of three different contexts that they interpreted their venture to be. These categorizations emerged during the extended discussions by the authors, as we realized that each individual interpreted their ventures in a different way. Interview responses were reviewed and discussed with two of the authors looking for statements that indicated the student's intentions. These included statements about the duration of the venture and its overlap (or not) with an associated class, and direct statements from the interviewees on their goals for the venture. Descriptions of the three contexts that emerged from these discussions follow:

- **Build a Business**: These individuals either legally formed a venture or were taking steps to try and grow a business such as actively seeking investors, forgoing career opportunities, self-funding the venture, etc.

- **Extended Duration Project**: These individuals started the project in the context of a class or curricular studies, but the project and their efforts extended beyond the scope of the class. They may or may not have started a business, but none were trying to turn the project into something that would become their source of financial support. These individuals did desire for the products they were developing to become commercialized

and/or distributed, but envisioned this happening through either internal or external partners that would eventually take over the project when they were ready to move on.

- **Exclusively a Class Project**: These individuals worked on the venture as part of a class. They may have put significant effort into the venture outside of class and may have considered starting a company from the project after completing the class, but once the class was over they completed the work on the venture.

	Build a Business (Total = 11)	Extended Duration Project (Total = 8)	Exclusively a Class Project (Total = 1)
Business Failing	5	2	
Failure to Learn	2	2	
Not reaching the potential of the venture	1	3	
An assumption that's proven wrong or test that fails		1	
Working on something that isn't a problem or need	1		
The point at which you move on to something else	1		
Having a negative impact on people			1
Not having the mindset that you're doing this to learn	1		

Table 3: Definitions of failure from research participants categorized by their intentions or level of commitment to the venture.

Not surprisingly, for those whose intentions were to build a business, the business failing was the most common definition of failure. Despite that, these participants also listed almost all of the other definitions of failure that those not intending to build a business did. For those whose intentions were an extended duration project, failure to learn and the venture not reaching the potential of the venture were as commonly listed as the definition of failure as the business failing. This is not surprising given that the projects each started as a learning experience, and these individuals were not trying to build something to financially support themselves, BUT were trying to develop and commercialize a product that they believed would have a positive impact. One individual we spoke with started their venture in the context of a class project and

despite winning a relatively large amount of money for the venture and gaining statewide recognition for the venture during their work in the class, ceased operation as soon as the class ended. Due to their success, the team did discuss continuing after the class, but eventually none of them continued working on the venture after completing the course.

Discussion:

As discussed above, the purpose of this paper is to describe the overall NSF-funded project exploring students' failure experiences in entrepreneurship ventures. This paper still represents a work-in-progress for the overall study, as we are continuing to collect and analyze the interview data.

The study does have some limitations, including challenges with identifying potential participants. The initial goal of the study was to interview 20 participants. The project team has struggled to find individuals who fit the criteria who are willing to participate. The initial search criteria, focused primarily on connections with [non-profit organization] did not result in many willing participants. We hypothesize that some of the challenges with identifying participants stems from COVID, with people feeling burnt-out and less willing to give time to participate in a research study. We also hypothesize that many of the individuals who fit the criteria for the study are extremely busy with career and personal demands in the next phase of their life after their venture has ended and therefore are less willing to give time to participate in a research study. Due to these challenges as well as other COVID-related delays, the project timeline has been extended. We hope to collect additional data this spring semester and to continue data analysis.

Despite the challenges with data collection, the findings that have emerged so far have been extremely interesting. We are learning that how students and early alumni experience and define failure is strongly related to several factors, including the type of venture they are pursuing, their own personal context, and their level of commitment to the venture. Those students who considered the venture as focusing on social impact were more likely to interpret the failure as not reaching the venture's potential, as compared to a business failing. Those individuals who interpreted the activity in a curricular way, such as a class project, were more likely to define their failure as a learning opportunity rather than a failure of the business. From our data, this did not appear to be related to the amount of time spent on the venture or the amount of money raised.

Although not discussed in this paper, the data also showed some significant mental health consequences for some of the individuals who had experienced the failure of their venture. We are currently pursuing a model to explain which individuals are more at risk to experience these mental health challenges. The ultimate goal of this research project will be to identify those individuals who may be at more severe risk of developing mental health challenges as a result of

the failure of their venture during their undergraduate or immediate post-undergraduate career. The identification of those at risk for more serious consequences of mental health concerns would have significant implications for entrepreneurship educators.

The study has also begun to give some early indications of formative events or experiences that helped student entrepreneurs have adaptive, rather than maladaptive responses to entrepreneurial failure. These will be expanded on in future work and will be aided by a larger sample set of research participants, but the aim would be to understand these formative events and look for ways to design these learnings into university entrepreneurial curriculum or support structures to aid student entrepreneurs in adaptive responses when faced with entrepreneurial failure.

Acknowledgements:

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Appendix A: Semi Structured Interview Protocol

Semi-Structured Interview script for people whose ventures are no longer in existence

Introductory remarks, introduction of researchers on the interview, reminder of the IRB process and approval including confidentiality, anonymity, and data protection. Reminder that the participant may choose to end the interview at any time without any penalty to them and thanking the participant for their time and willingness to participate in the research study.

<u>Introductory Questions (for all participants)</u>

1) Tell me a little about yourself. Where are you currently working and what type of work do you do? Where did you go to college? What degree were you working on while working on this entrepreneurial venture?
2) Tell me a little about the venture that you worked on with VentureWell. When did it start? What activities with VentureWell did you participate in? Describe how the venture started, howAs long you worked on it and in what capacity?
3) Tell me about the composition of the team that worked on the venture. How many people were on the team? What were their backgrounds?

<u>General questions on what happened (description of venture end/failure)</u>

4) There isn't any right or wrong answer to this. Tell me about how you would define a failure or failures during the entrepreneurial process.

5) In thinking about responses to failure, some people, when they experience failure, become very frustrated and unmotivated, and don't want to take on other challenges. Other people, when they experience failure, view the failure as a learning opportunity and are still willing to take on other challenges right away. Which of these, or potentially which elements of each do you most relate to?

6) Tell me about what you perceived to be the biggest failure you experienced during your entrepreneurial journey.

7) Tell me about other experiences you had during your entrepreneurial journey that at the time they occurred you perceived to be failures?

8) Explain for me the similarities and differences you see between these different events?

9) Tell me specifically about the events and circumstances that led to your venture ceasing operation and how you perceived that at the time? (**This question is optional based on if it was addressed above**)

10) Has your perception of these moments of entrepreneurial failure changed at all over time? If so, please describe how your perception has changed?

11) Tell me about how you responded to some of the moments that you perceived to be failures?
   a) How did you feel during these different moments of perceived failure?
   b) Why do you think you felt this way?

12) When you think about the two types of people and responses we described earlier (becoming very frustrated and unmotivated, and don't want to take on other challenges or view the failure as a learning opportunity and are still willing to take on other challenges right away) which do you feel you were more like right after the failure happened?

13) Do you think you still feel that way, looking back at the failure now?

14) What are some factors that influenced how you responded in these moments?

15) Tell me about your experiences after the venture ceased operation? How and when did you notify others about the venture ceasing operation? How long did you take afterwards before you began pursuing other opportunities? Did you seek guidance, mentorship or help from other support structures during this time? Tell us about any other information that was important to you while moving on from your entrepreneurial venture.

16) Even though your venture ceased operation do you view the experience of starting your venture positively or negatively and has that view changed over time? Explain your response.

We want to shift the discussion a little bit now to help you inform us on different support systems, training, etc. you may have gotten either before, during, or after these moments of

perceived failures in your entrepreneurial journey. These could be things you learned or were taught long before you ever thought about starting your venture, things you learned or support you received during your venture, or interventions and support you received during or after these moments of failure.

17) Did you ever receive any information/training about how to handle failure before you started (or while you were starting) your venture (for example, in a course, program, etc.)? If so, please describe this.

18) What type of support would have better helped you respond when your venture ceased operation? If you could go back in time, what resources would have been most helpful either before or after your venture ceased operation?

19) When you experienced these different moments of failure, tell us about any support specifically from the university you were affiliated with that you didn't previously mention that was particularly helpful and how (i.e. instructor, advisor, office or entrepreneurship center, mentor, etc.)? This could be support provided either before or during the experiences you described.

20) What support could the university you were affiliated with have provided that would have been beneficial to you to help you through these moments of failure?

21) Are there any other things that were important about these experiences and how you worked through them that you think we should know?

22) Are you considering starting another venture or have you made any steps toward starting another venture?