

Biomedical Stakeholder Café – Continual Improvement & Integration of a Novel Adapted RADAR Framework for Stakeholders

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Abstract

Human-centered design processes, recommended for many healthcare-focused engineering design projects, require engaging and involving multiple, diverse stakeholders. Health care stakeholders can be particularly diverse and challenging to successfully integrate into a design process, especially for students. Facilitating opportunities for engineering students to learn how to engage with stakeholders can be challenging with only a few case studies published in this area. In Fall 2023, a novel student-stakeholder interaction model was implemented as the Biomedical Stakeholder Café, with a successful second iteration in Fall 2024. The paper presents (1) an overview of key improvements to the stakeholder café interaction model and (2) an analysis of student and stakeholder perspectives of the café experience in Fall 2024 compared to Fall 2023.

Key improvements implemented in Fall 2024 include changes to timing and number of conversations, increased communication of expectations to stakeholders, and integrating a novel adaptation to the Relevance, Authority, Date, Appearance, and Reason (RADAR) framework to support students in thinking critically about interacting with and synthesizing information from stakeholders.

The 2024 event supported 32 student teams (28% increase compared to 2023), representing 134 students (25% increase), in connecting with 31 health care stakeholders (22% increase) across 65 conversations (48% increase). Net promoter score (NPS) was 52 for the student perspective and 92 for the stakeholder perspective. While the student NPS was significantly lower (p = 0.08) than in 2023 when the NPS was 74, student perspectives remained consistently positive in terms of the event being a good use of time and improving communication and design skills. A significant decline (p = 0.003) in perceived importance of attending the preparatory workshop is likely due to repeat participation in the event suggesting the need for an alternative activity for repeat students.

As the Biomedical Stakeholder Café transitions from pilot to long-term endeavour, priority areas of future work will be adjusting the workshop for repeat students, strengthening student and stakeholder outreach, optimizing student-stakeholder match, and long-term evaluation of performance metrics.

Introduction

Human-centered design frameworks are recommended for many healthcare-focused engineering design processes [1], [2], [3], [4] with a key step being developing a deep, systematic understanding of the problem to be solved through engagement and involvement of multiple, diverse stakeholders [1], [2], [3], [5], [6], [7], [8], [9], [10], [11]. This is particularly important for biomedical engineering where a multi-stakeholder co-design process has been recommended [2].

Facilitating opportunities for students to learn how to engage with and learn from diverse stakeholders can be challenging [4], [12] with only a few case studies published in this area [12], [13], [14], [15], [16], [17]. Health care stakeholders can be particularly diverse and require additional consideration and coaching for student success but targeted engineering student training in this area is lacking with recent published worked limited to our own [18], [19], [20].

Pedagogical activities aimed at enhancing students' human-centered design skills and ability to effectively engage with stakeholders have ranged from introductory exercises to more advanced applications of skill. In a first-year course, Marbouti and Diefes-Dux [15] supported students in improving their ability to identify stakeholders without direct stakeholder contact. Oehlberg and Agogino developed stakeholder-focused synthesis skills first-year mechanical engineering students [17], but the level and structure of direct stakeholder contact in the course is unclear. Titus et al. [14] fore-fronted stakeholders with a service-learning approach with three example projects from implementing this approach presented in [13]. Jordan and Lande had students engage directly with real clients in a third-year electrical engineering course but only half the design groups managed to achieve this direct stakeholder interaction [16]. At the capstone level, Mohedas et al. [12] interviewed students to understand their perceived value of stakeholder engagement in engineering design. Insights regarding challenges final year students experience with student-stakeholder interactions were elicited, but no structured activities were provided to facilitate student-stakeholder engagement [12]. This indicates a need for structured activities that provide students with advanced, capstone-appropriate opportunities for stakeholder engagement.

In Fall 2023, the Biomedical Stakeholder Cafe ran for the first time following the studentstakeholder model presented in [19], [20] as an optional, extracurricular activity to support student capstone teams working on their final year design projects. The model is described in detail in [19]. In brief, the model runs across the first half of term and includes student applications, a workshop focused on teaching semi-structured interview best practices, and student-stakeholder conversations that took place in a cafe style setting. Key improvements identified after this first, pilot year were strengthening the preparatory workshop, lengthening time for student-stakeholder conversations, and supporting virtual stakeholder participation.

The paper presents (1) an overview of key improvements to the stakeholder café interaction model, (2) an analysis of student and stakeholder perspectives of the café experience in Fall 2024 compared to Fall 2023, and (3) an initial assessment of and plan for long-term stability and expansion of the stakeholder cafe student-stakeholder interaction model.

Improvements to the Student-Stakeholder Interaction Model

The overall framework of the student-stakeholder interaction model remained unchanged from Fall 2023 to Fall 2024, and the overall process is shown in Figure 1 [CEEA 2024]. Key changes were made to the preparatory student workshop and student-stakeholder conversations.



Fig. 1. Student-stakeholder interaction model process [19]

For the preparatory workshop, the core goal of preparing students for the student-stakeholder conversation and associated content remained essentially unchanged by explaining event rules, reminding students of best practices, and providing an opportunity for students to practice with each other. At the start of the workshop, additional framing was provided to help students understand the value of stakeholder interviewing not only for the stakeholder conversations but also as an important part of the needs assessment phase of the design process [21], [22] and a professional skill [10], [11]. Additional content was also added to support students with gathering, evaluating and synthesizing information from their stakeholders, which is a known challenge [12].

While many tools existing to support students in evaluating information from written sources like journal papers, news articles, online information sources, etc. [23], [24], [25], [26], there is a lack of similar frameworks or tools for evaluating information provided from stakeholders. To address this gap, the RADAR framework [27] was modified to explicitly focus on evaluating information provided by stakeholders. RADAR is a mnemonic for the five criteria in the framework: Relevance, Authority, Date, Accuracy, and Rationale. Key considerations and questions provided to student are presented in Table 1.

RADAR	Key Considerations.	Key Questions.	
Relevance	Stakeholders will share both on and	Is the person sharing information that	
	off-topic information. Off-topic	is related to question asked?	
	information can feel more important	Do they need the opportunity to share	
	to stakeholders as it may be tied to a	something before they can focus on	
	particularly emotional or negative	answering the question?	
	experience. They may have agreed	Can the person be guided back to the	
	to talk to you so that they could	topic at hand with a follow up	
	share this with someone they	question?	

Table	1.	RADAR	for	Stakeholders	Framework
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	perceive has the power to make change.	
Authority	Stakeholders often want to help and provide answers to any questions asked. However, they may not have the same depth of expertise, insights, or lived experience with all the questions asked.	Does the person have credentials that indicate their expertise? Is specialist expertise needed? (e.g., any nurse, registered nurse, cardiac care nurse) What is the person's lived experience? What have they and haven't they experienced first-hand?
Date	Memory is imperfect. Stakeholders will not perfectly recall an event, especially if it occurred a long-time ago. Their memory may be influenced by their emotional state, how often they experienced the event, and other factors.	Are you asking the person about a recent experience or something that occurred a while ago? Is this an experience that occurred to them frequently or only once?
Accuracy	Stakeholders may share incomplete information, second hand information, or information they are unsure about. Stakeholders may cue the interviewer that they are doing this, but not always. It is important to ask follow-up questions to understand accuracy.	Is the person speaking to their own experiences, or those of a colleague, friend, family member, or someone else? Is the person telling you they are uncertain with their words?
Rationale	Stakeholders agree to be interviewed for a variety of reasons. Their own reason for participating may influence the information they choose to share and not share.	Why is the person telling you their opinion? Have they made it clear if they are informing, selling, educating, convincing, venting, or storytelling?

The student-stakeholder cafe-style conversations were modified to allow for consistently longer conversations while keeping the casual atmosphere that students and stakeholders enjoyed in Fall 2023 [20]. In Fall 2023, 15-minute and 25-minute timeslots were used across two one-hour cafe events with feedback from students and stakeholders indicating that the 25-minute timeslot was preferred by both groups [20]. In Fall 2024, only 25-minute timeslots were used across two 1.5-hour cafe events. Additionally, virtual stakeholder participation was facilitated when needed. This required having pre-prepared virtual meetings, available meeting rooms, and laptops to facilitate the meeting.

Methods

The Biomedical Stakeholder Cafe implementation of the student-stakeholder cafe model is assessed each year. Assessment was performed through three facets: (1) event organizer observations, (2) a stakeholder survey (Fall 2024 only), and (3) a student survey. Stakeholder and

student surveys were completed online using Qualtrics with requests to complete the survey, and associated reminders, sent via email in the two-week period after the café.

The student survey remained consistent between Fall 2023 and Fall 2024 to allow for comparison between years. This survey focused on understanding student perceptions of the event, including preparatory workshop and cafe conversations, through open and closed-ended questions. The survey also included a likelihood to recommend question. Fall 2023 student survey data was first presented in [20].

The stakeholder survey was newly implemented in Fall 2024 as a replacement for the stakeholder focus groups performed in Fall 2023 in the interest of long-term sustainability of the event from a stakeholder viewpoint by reducing the time commitment. The stakeholder survey, similar to the student survey, included a likelihood to recommend question, and closed and open-ended questions to understand the stakeholder experience.

Observations from the event organizers were recorded throughout the duration of both the preparatory study workshop and Biomedical Stakeholder Café evenings. The event organizers were familiar with the capstone team application and stakeholder matching processes, along with the logistics required to run the event. Particular attention was paid towards the likeness and potential outcomes that may be correlated with any differences from the previous year's model.

Informed consent was obtained from all students and stakeholders. Participation in the Biomedical Stakeholder Café was not conditional on participating in the research surveys. This study received ethics approval University of Waterloo Office of Research REB 45531.

Likert questions were all asked using a 5 pt scale. They are presented numerically as median, interquartile range (IQR) with more negative word anchors like 'Definitely Not' assigned a value of 1, progressing in increments of 1, to more positive word anchors like 'Definitely Yes' assigned a value of 5. Statistical comparisons between these questions were performed using Mann-Whitney U-test. For binary questions, statistical comparisons were preformed using Fisher's exact test. Statistical comparisons between years were performed using the Mann-Whitney U-test. All statistical tests were performed using R version 4.1.2 with $\alpha = 0.05$.

Likelihood to recommend questions were analyzed using the standard approach of the difference between percent promoters and detractors to derive the net promoter score (NPS) [28], [29]. While typically used to determine the satisfaction and projections of businesses, Kara and Zeren [30] highlight the importance of NPS in higher educational institutions. NPS is calculated by classifying survey respondents into three categories based on customer's likelihood to recommend, reported on scale from 0 (low) to 10 (high). The three categories are: detractors (0-6), passive (7-8) and promoters (9-10) [28], [30]. The NPS was adapted to demonstrate the satisfaction and long-term sustainability of the Biomedical Stakeholder Café from both student and stakeholder perspectives.

A thematic analysis of open-ended survey questions is outside of the scope of work for this paper. However, following a mixed-methods approach, quotations are provided to enrich and provide context to the analysis of closed-ended questions.

Survey Respondents

Thirty-seven students (28%) completed the survey. 27 (69%) identified as female, 8 (21%) identified as male, and 2 (5%) preferred not to identify their gender. The average age was 21.5 ± 0.9 years.

Of the 22 stakeholders who participated in student-stakeholder conversations, 13 (59%) participated in the stakeholder survey. Of the respondents, 10 (77%) identified as female and 3 (23%) identified as male. The average age was 49.0 ± 12.3 years.

Outcomes & Discussion

Biomedical Stakeholder Cafe Implementation

The second-ever Biomedical Stakeholder Café was successfully executed in Fall 2024, building on the success of the first, pilot year in Fall 2023. Fall 2024 saw an increase in the size of the café compared to Fall 2023 as shown in Table 2. Of the 33 complete applications, one team was rejected due to their interest in speaking with researchers, which is outside of the scope of the Biomedical Stakeholder Café. The largest increase in number of conversations can be partially attributed to the increased duration of the event, allowing every stakeholder to have up to 3 conversations. In Fall 2023, stakeholders assigned 25-minute timeslots could only meet with up to 2 capstone teams. While not formally tracked in Fall 2023, the Fall 2024 Café has already led to 10 follow-up conversations between capstone teams and stakeholders.

	Fall 2023	Fall 2024	Percent Increase
Complete Student Applications	28	33	17.9%
Stakeholders	18	22	22.2%
Capstone Teams	25	32	28.0%
Students	107	134	25.2%
Conversations	44	65	47.7%

Table 2. Biomedical Stakeholder Café Engagements.

Each of the 22 stakeholders were recruited for one or more roles of the following roles: healthcare professional (e.g., physician, nurse, therapist, etc.); persons with lived experience (e.g., living with a disability or condition, people with experience with a disease or illness); individual who works or volunteers for a not-for-profit healthcare organization; and individual who works or volunteers for a for-profit healthcare organization. Eighteen (58%) of the stakeholders were recruited during the initial recruitment phase from personal and professional contacts of the event organizers. Thirteen (42%) of the stakeholders were recruited during the ongoing recruitment phase based on

the needs of student design spaces. These stakeholders encompassed a variety of professions (medical doctors, a music therapist, a speech language pathologist, an anaesthesiologist), along with various lived experiences (hearing aid user, concussions, spinal cord injury, and endometriosis). While relevant stakeholders were recruited for all 32 teams invited to attend the Biomedical Stakeholder Café, the short window for additional stakeholder recruitment and potential gaps in expertise within the event organizers' personal and professional contacts are both recognized as limitations of the current model. Approaches to expand the stakeholder network available for recruitment in future will be discussed later in future work.

The 13 stakeholders represented in the survey data include 9 healthcare professionals, 1 person with lived experience, and 3 individuals who identified as bringing experience in more than one domain (e.g., healthcare professional and person with lived experience). Most (n = 8) stakeholder survey respondents participated in three conversations with student teams with three stakeholders having less than three conversations and two stakeholders having more than three conversations. These two stakeholders participated in student conversations on both evenings, and each had conversations with five different student teams.

The increased student interest from the first to second year is an encouraging sign of the long-term viability of implementing the student-stakeholder interaction model demonstrated in an increased number of applications and students supported in the event. The increase is particularly impressive given that some of the biomedical engineering students were participating for the second time due to the three-semester format of their capstone project.

The increased stakeholder involvement in the second year also points to the viability of long-term implementation of the model. Event organizers observed that every stakeholder from the first year agreed to participate in the second year. This repeat engagement is critical given that 41% of the 2024 stakeholders had already participated in 2023. Event organizers also noted that each year of the event provides new opportunities for connections and growing the network of possible stakeholders to engage for future years.

The increased implementation numbers in the second year were feasible for event organizers due to greater familiarity with the overall process, timelines, and complexities learned from the first, pilot year. However, it is important to acknowledge that these increases are not sustainable year-after-year in the long-term and that the Fall 2024 implementation likely represents the desired long-term levels with no further increases. The event organizers observed that ~30 capstone teams may be used as a rough guideline of event capacity across two 1.5 hr cafes for future Biomedical Stakeholder Cafes.

Preparatory Workshop

The preparatory workshop continued to be a valued element of the student-stakeholder interaction model as shown in Table 3 with 71% of survey respondents identifying the workshops as important (Figure 2) and 83% as a good use of their time (Figure 3) compared to 85% and 91% in 2023,

respectively. While student perceptions were more positive in 2023, this difference was only significantly different for student perceived importance (p = 0.003) with the largest shift in responses being between definitely yes and probably yes.

	Impo	ortant	Good Use of Time		
	Fall 2023	Fall 2024	Fall 2023	Fall 2024	
Definitely Not	1	1	1	0	
Probably Not	1	4	0	3	
Unsure	3	4	2	2	
Probably Yes	10	18	12	15	
Definitely Yes	19	4	19	11	
Prefer Not to	0	0	0	0	
Answer					

Table 3. Student perceptions of the Preparatory Workshop in 2023 and 2024.



Fig. 2. Student perceptions of the preparatory workshop as important to attend.



Fig. 3. Student perceptions of the preparatory workshop as a good use of their time.

This change in student perceptions may be due to the nature of the biomedical engineering undergraduate capstone project being a 3-term project. Some fourth-year biomedical engineering student participants had previously participated in the workshop in the Fall 2023 Biomedical Stakeholder Café and were taking it for the second time. The content of the workshop was largely unchanged between the two years with the RADAR for Stakeholders framework being the only new content. This reasoning for the changed student perceptions was supported by student responses when asked to describe what was learned during the preparatory workshop, suggesting the need for a new approach for students participating in the Stakeholder Café for a second time that will be discussed further in future work.

"That it is quite difficult to get meaningful and unbiased information from stakeholders. To note though, this was my second time participating. The second time I didn't learn anything new than the first time."

With the addition of the RADAR for stakeholders framework, in combination with pre-existing workshop content, students identified several important insights from the workshop that helped guide their interactions with the stakeholders and evaluate the information they received regarding the personal and professional experiences of the stakeholders. While a full thematic analysis has not been performed at this stage, an initial overview of responses identified proper communication approach during a stakeholder conversation, discussing difficult or emotionally charged topics, identifying biases, and practicing empathy in student responses as demonstrated by two students responses below.

"In the preparatory workshop, I learned how to effectively communicate with stakeholders, particularly how to present my project clearly and concisely while asking targeted questions to get valuable feedback. I also gained a deeper understanding of the dos and don'ts of stakeholder engagement, such as actively listening, respecting different perspectives, and maintaining professional behavior. The workshop emphasized the importance of cultural sensitivity and how to respectfully communicate with people from diverse backgrounds. Additionally, I learned practical strategies for managing time, facilitating discussions, and handling constructive criticism in a productive manner. Overall, the workshop equipped me with the tools to navigate the Stakeholder Café with confidence and professionalism."

"Being more aware of biases and creating purposeful questions which helped us get information."

Student-Stakeholder Conversations – Student Perspectives

The student NPS was 52 with 52% promoters, 48% passive, and no detractors. While this is less than in 2023 when the NPS was 75, it was not a significant decrease (p = 0.08), and the absence of any detractors is a positive sign for long-term viability. The higher NPS in 2023 may be due to the novelty of the Stakeholder Café as a first-of-its-kind event compared to a repeat event. Fifty-two is still a very strong NPS in the context of higher education where an NPS of 6 was recorded in engineering course satisfaction surveys [31], NPS of 10 to 80 were measured for engineering programs [32], and a negative NPS of -14 was reported for a College of Business [30].

In addition to a relatively high NPS, students identified clear benefit in participating in the studentstakeholder conversations with 85% of students indicating they had learned something they would incorporate into their design project and the remaining 15% being unsure. Similarly, 59% indicated a perceived increase in design skills (Figure 4) and 74% for communication skills (Figure 5) with 96% identifying the conversations as a good use of their time (Figure 6), as shown in Table 4, with no significant differences between 2023 and 2024 (p > 0.500).

	Improved design skills		Improved		Good Use of Time	
			communication skills			
	Fall 2023	Fall 2024	Fall 2023	Fall 2024	Fall 2023	Fall 2024
Definitely Not	0	0	0	0	0	0
Probably Not	5	5	3	4	1	0
Unsure	8	6	5	3	0	1
Probably Yes	13	13	15	14	5	7
Definitely Yes	6	3	8	6	26	19
Prefer Not to	1	0	2	0	1	0
Answer						

	Table 4. Student r	perceptions (of Student-Stake	holder Convers	sations in 202	23 and 2024
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Fig. 4. Student perceptions of improvements to design skills due to student-stakeholder conversations.



Fig. 5. Student perceptions of improvements to communication skills due to student-stakeholder conversations.



Fig. 6. Student perceptions of the preparatory workshop as a good use of their time.

In their open-ended comments, students were clearly able to describe the benefit of the studentstakeholder conversations for their projects.

"From the Stakeholder Café, we learned the importance of continuous monitoring and the need for generating a comprehensive report from the data collected by our device. Moving forward, we will integrate this feedback into our capstone design project by ensuring that our system not only collects data effectively but also provides clear, real-time feedback and generates detailed reports for users and stakeholders. This will help in improving usability, making our solution more informative, and aligning it with stakeholder expectations. We'll also implement a regular monitoring feature to capture data over time, allowing for better analysis and actionable insights."

Students were also able to describe improvements to their communication skills and how they intended to apply this in an on-going manner during their capstone project.

"Now when I talk to someone about my capstone, even if it's a peer, I think about how I can phrase questions most appropriately in the back of my mind to get better feedback."

Student-Stakeholder Conversations – Stakeholder Perspectives

The NPS for stakeholder respondents was also calculated based on their likelihood to recommend this event, both to students and other stakeholders. A score of 92 was achieved for both cases, much higher than the student NPS of 52, comparators in higher education discussed earlier [30], [31], [32], and even the advertised mid-50 NPS of some of the most customer-favoured industries such as an online shopping and department/specialty stores [29]. The high stakeholder NPS is particularly important for the long-term viability of the student-stakeholder model as the

stakeholders are the ones who bring the value of their unique expertise and insights without which the event could not run and aligns with all 2023 stakeholders being willing to participate again in 2024 if needed. It is also reflected in stakeholder open-ended comments where they saw value in the event for students and themselves.

"All of my conversations with students were great. They had such interesting ideas, and were really eager to learn more about their interests. The conversations also reminded me how opaque health care can be to people outside the field, such as patients, or in this case engineering students. That reminder is always timely, and helps me continue to strive to be a better care provider and communicate more effectively with everyone I work with across various domains, including students and patients."

The high NPS score also aligns with the positive responses received by stakeholders in other sections of the survey. 64% of the stakeholders declared that this event was a valuable use of time while the remaining 36% declared it was a good use of time with no neutral or negative responses. Similarly, the overall experience was identified as either very good (15%) or excellent (85%) with no neutral or negative responses.

It was also important to gauge the stakeholder opinions on the quality of the student-initiated conversations through questions focused on students' respectfulness and ease of conversation. Half of the respondents identified the ease of conversation to be easy, while the other half declared it to be very easy with no neutral or negative responses. Almost all stakeholders identified the students as either respectful (7%) or extremely respectful (85%). One stakeholder (7%) identified students as extremely disrespectful, however this is likely an error during survey completion as it does not align with the rest of this stakeholder's open-ended responses, such as:

"I found all the conversations quite interesting and what made them all 'good' was the level of preparedness I saw with the students. They had obviously considered what they wanted to know and to what depth. I also appreciated how everyone was engaged. Every individual in each group took turns asking questions so I felt like all of the participants were very invested in this endeavour. It made it very easy for me to interact and I felt more motivated to help when they showed such enthusiasm."

Limitations & Future Work

While over half of the stakeholders (59%) and 28% of student participants completed the survey, it is important to note that not everyone who participated in the event completed the survey. There could be opinions not represented in the survey respondent pool. With funding secured to run the Biomedical Stakeholder Café, survey data will be collected each year which will increase the overall sample size allowing for greater confidence in the results being representative and the ability to analyze for stability or changes in event metrics like the NPS, student participation, and student and stakeholder perceptions over time. Future research projects will fully evaluate the RADAR framework and its effectiveness around stakeholders, rather than pieces of literature.

Future improvements as Biomedical Stakeholder Café transitions from a pilot initiative to a longterm endeavour will initially focus on two key areas. The first is developing an alternate, brief preparatory exercise for students who completed the preparatory workshop in an earlier year. This preparatory exercise could be reviewing a brief handout of key information and rules, changes from the previous year, etc. followed by a short multiple choice comprehension assessment. The second is finding a balance in matching stakeholders with capstone teams. Stakeholders with deep, highly specific and closely matched expertise and experience with one capstone team's project may not be able to have a meaningful conversation with other teams. However, stakeholders with general, broad expertise and experience with several capstone teams' projects may not provide much value beyond other, readily available information sources like websites, journal papers, etc. Therefore, an ideal stakeholder will have at least some area of specific expertise or experiences that can provide valuable and project-specific insights to at least two but ideally three capstone teams.

Completely understanding each potential stakeholders' expertise and experiences in the Stakeholder Café network can be challenging and developing a better process for capturing this and communicating this clearly to the students remains an area of future work. Deepening the network of stakeholders that can be connected year-on-year to participate in the Stakeholder Café would also be beneficial. Strategies to expand the network include engaging with alumni, further leveraging institutional industry contacts, and using stakeholders already in the network to connect with new, potential stakeholders.

Conclusion

The student-stakeholder interaction model was successfully implemented for a second year with the Biomedical Stakeholder Café achieving a stakeholder NPS of 92 and a student NPS of 52 with the integration of an adapted RADAR framework for stakeholders as a new learning tool to support students with synthesizing stakeholder insights. The Biomedical Stakeholder Café elicited an increased number of capstone team applications with increases in the number of capstone teams, stakeholders, and student-stakeholder conversations supported. Students and stakeholders both identified value in the event in support of capstone design projects and overall design and communication skills. As the model transitions for pilot to long-term implementation, future work will focus on supporting repeat student participants and developing a system for documenting stakeholders in the Stakeholder Café network and their associated experiences and expertise.

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