<virtual> Capstone Design Conference 2025
Thursday, June 12, 2025
1:00-5:30pm EDT

Session 1
Building Industry Relations

Panel 1: Building industry relations - the future of industry-sponsored capstone projects (1:00-2:10 PM Eastern)

Facilitator: Robert Hart (Univ. of Texas Dallas)
Sidekick: Shraddha Sangelkar (Rose-Hulman Institute of Technology)

Panelists:
Jorge I Rodriguez (UGA: Univ of Georgia)
Nagesh Hatti (MTU: Michigan Tech)

Notes:

- Enterprise program at MTU: 1500 students supported annually, ~300 are capstone; interdisciplinary program, includes non-engineering majors across multiple years; 80 to 100 sponsorships annually. Reaches out to 500+ companies to get the 80 to 100 sponsorships.
- UGA has 9 sections of capstone (needing ~140 projects per year)
- Industry relations: any type of organization that supports student capstone projects; include for-profit and non-profit organizations, as well as government

-Question: **How is the current industry/business environment impacting your program?**

MTU: reach out to 500 to 600 sponsors annually; business cycle leads to sponsor hesitancy; automotive industry is tentative this year. Over the last 3 years, university donations have been consolidated; larger companies are sponsoring fewer projects; lots more convincing for the corporate funding gatekeepers. Larger companies seem to have more hesitancy, smaller companies increasing interest. Have a $17,500 ask for sponsorships for 2 semester projects including IP / $15,000 without.

UGA: ambiguity in the business environment due to the political environment; delays in collaboration with new engagements; in the southeast, more hesitancy amongst larger companies; seeing a lot of transitions among project proposers–some leave the company before the project starts. I have to adjust to the goals of the industry. CAGR 12%--how to increase industry engagement to match student growth.

At the University of Vermont, I'm seeing more interest from faculty for faculty-sponsored capstone projects this year. Perhaps because research funding is being reduced. Still strong industry interest. Industry gives sponsorship fee plus student budget. The faculty only give student budget.

Questions from the Audience

-Keith Epstein: **What factors would cause you to reject a potential sponsor or project?**
See response to what makes a good sponsor below

-Hrushi Godbole: **What are the activities in the pipeline from first contact with industry sponsors to students starting to work on the project?**
See response to what makes a good sponsor below

What makes a good sponsor?
MTU: shy away from 1 to 5 person companies–expectations are too high from these companies; cold calling is not effective; better to go to alumni; have a "warm contact" approach through the career services/expo;
Stanfill's experience: start-ups pivot too frequently; "two guys and trick duck" = bad news for projects…
At RIT, we've had some really successful projects with startups, but we are careful about setting expectations and have had to do some client coaching behind the scenes once in a while. RPI - agreeing!

-David Guo: **how to kick start new sponsorship?**

-Ben Fong: **What is the typical Capstone Donation $ amount per project? One semester or 2 semesters long?** Thanks!
Check out the Capstone Design Community website: the survey that Susannah Howe does (and did this year) includes that. https://capstonedesigncommunity.org/capstone-surveys

> [Susannah notes: we are processing the 2025 data currently, but it will take a while. Results will be shared as a keynote at the 2026 Capstone Conference and, ultimately, on the capstone design community website.]

-Steve Zahos: Nagesh, **what did you say your sponsorship "ask" is for a 2 semester engagement?**

MTU: $17,500 for a two-semester project if the sponsor wants to retain IP rights; no IP retention is $15,000;

Salesforce CRM used at MTU–especially helpful in maintaining relationships and onboarding new capstone coordinators. 2 full time associate directors focused on recruiting. Alumni are a great source of leads (90%); work with Career Services and Advancement Team to make structured asks to the big companies.

UGA: College leadership has to recognize that capstone funding is important and the relationships have to be nurtured; benchmarking important: 3 tiers $5000, $10,000 and $25,000; sponsored project vs donation; currently donation-only; donations are easier to start up versus sponsored projects; donations means no expectation of deliverables; need multi-faceted recruitment approach; serving 2 bosses: students and clients; need to deliver expected level of professional competence.

Stanfill experience (UF and UTK over 25 years): 13 contacts with a sponsor to close on a project.

Jenn Carlson Michigan MDP - we agree. We try to have at least 50 people in the sponsoring company. Start ups are not able to provide enough focus and the results are too critical for them. They have other things to worry about.

Many times, you can also find this information on the capstone program's website. This can vary significantly based on the discipline.

Keith Epstein: At UVM, cost is $2k-$10k depending on company size. Details at go.uvm.edu/seedcapstone.

John Fick: We ask for $5k but don't require it. 1 required visit and weekly conference calls.

Nara Almeida: UW charges the same as MTU ($15k)

David Comisford: Our system sees ~2k projects a year and the average price for a paid project (excluding free) last year was $4,450. We did a Q&A panel with 4 schools on interdisciplinary projects; they all reported interdisciplinary projects are easier to "sell" to industry. We do see a higher avg price for interdisciplinary projects in our database too

-Jonathan Aurand: **How do you manage other "asks" the university may be making of the same organizations?**

I.e. At MTU does Enterprise coordinate with the Institutional Advancement office to maybe hold off on asking Ford for 3-4 projects because someone else is chasing a donation for naming rights on a building?

-John Estell (ONU): **how do you handle industry sponsored projects where there is only a single point of contact offered?** I think many of us have experienced the demise of a capstone project because of that single point of contact leaving the company…

Mark Anderson (RPI) - we normally ask for two PoC, just in case. We'll often know the person's manager, so we haven't experienced this broken link issue.

Stanfill (UTK & UF): we have an executive sponsor, and ask for a technical liaison and business liaison

Susannah Howe (Smith) - I typically ask for 2+ liaisons also. Typically one is a more junior engineer and the other (or others) are more senior, but it can vary. Some sponsors also provide names of employees who can be "additional contacts/resources" but aren't expected to be coming to weekly meetings, etc.

-Ben Fong: **How often does the faculty/instructor take your Capstone Team to visit the Industry sponsor facility?** 1-3 times per semester or bi-weekly? Thanks!

Kim Fowler: I second Ben Fong's question and add one of my own - **how often do you ask or require a sponsor to participate with a project team?** Weekly? Monthly? Once a semester?

Jenn Carlson at University of Michigan MDP: Sponsor meets with the team 1 hour a week on conference call. The team might not ever visit the facility if they aren't local.

Keith Epstein (UVM): I encourage teams to visit as often as possible/needed. Meet once a week (virtual or in-person) for informal meetings, once every 3 weeks for formal reviews.

Mark Anderson (RPI) - when logistically possible, once during the semester. Local projects (1 hour drive) may go more often, as needed.

-Eli Patten: …and related to the sponsoring, **do you find it's the monetary aspect that is most limiting, or the mentor time? Do you offer reduced fees for some sponsors and how do you manage that?**

Keith Epstein (UVM): For most companies, it's the time. The cost is pretty low compared to hiring an engineer. We have a strong enough reputation that we don't need to reduce fees.

-Amanda Mills: **How do you navigate sponsors with strict NDAs for the students?**

Keith Epstein (UVM): Students sign NDAs and IP assignment agreements within the first 3 weeks. We have templates, and can adjust as the client needs. +1 Jenn Carlson (UM MDP)

Sarah Oman (Oregon State) - We ask the sponsors if they will require any specific onboarding for a project, then tell the students for each project what the expectations are. That way the students can decide on project selection ahead of time knowing if they have to sign an NDA, do a background check, etc.

Panel response from Nagesh: companies that are excessively concerned with keeping all information confidential are a reason to reject a project idea.

-Ben Fong: **how often does faculty/instructor join the weekly Project meeting with Client sponsors?** I have been told, most faculty do NOT attend, they have chosen to meet his/her student team weekly, not clients.

Mark Anderson (RPI) - we use a faculty+staff team and both always attend the client meetings. Students run the meetings, we attend to evaluate/assess and to stay "in the loop". We meet about every 3 weeks rather than weekly.

Sarah Oman (Oregon State) - I use a hands-off approach. Once they are in the teams, the students run the project and the expectation is on them and the sponsor to meet as regularly as they can. The best projects tend to have weekly meetings with sponsors. But that way the students have a sense of ownership to the project.

Keith Epstein (UVM): Students own the relationship with clients. Faculty only join if students/clients have an issue they can't resolve on their own.

Jenn Carlson (UM MDP): Our teams have dedicated faculty mentors who meet with the students 2 hours a week. The sponsor joins for one of those hours over Zoom, etc

Susannah Howe (Smith): Our teams have one weekly meeting with their liaisons and a separate weekly meeting with their faculty coach. The faculty coaches rarely join the liaison meetings - typically only if the project is starting to go sideways or it seems like there is a major disconnect between the students and the sponsor. (But then, I would be in contact with the sponsors directly as well.)

-Mark Walter: **How many full-time staff (and % faculty time) does your program dedicate to industry capstone?** To put the number in context, please also state how many industry capstone projects your program has. How are staff and/or faculty involved after a company commits to sponsoring a project.

Keith Epstein (UVM): I am the only full-time instructor, and I only teach capstone. 100 students, 25 projects, ME/EE, 2 semesters. I have a co-instructor who helps about 15% of his time. 2 graduate teaching assistants who help with grading and answering student questions, 2 work study students who receive packages. 1 staff person who helps with purchasing, about 15% of her time. Occasional help from college staff to help with event organizing/planning. And each team gets a faculty mentor who spends 10-30 minutes per week with each team.

Jessica Townsend (Olin College): We typically have 12 - 15 projects a year (5 students per team). Our capstone leadership team is usually made up of 4 faculty (each advises 3 - 4 projects), and two staff members who each put 75% effort into the capstone program (one is focused on business development, the other is focused on program operations). We do charge $60k/project, so that sets some expectations in terms of sponsor engagement and buy-in, and we design many aspects of our capstone accordingly. (https://www.olin.edu/academics-capstone-programs/scope)

Roberto Lopez: **Is a solution from students to the sponsor's problem guaranteed in the contract?**

Keith Epstein (UVM): No, specifically NOT guaranteed. Another capstone program director told me "The only thing we guarantee is that we'll take your money."

Mark Anderson (RPI) - same as UVM. We spend a lot of time ensuring this is clear to the sponsor to avoid later issues.

Susannah Howe (Smith): We can guarantee that the students will have an educational experience, and I do guarantee that if we take on a project, that the students will spend the time on it (as will I as the faculty coach), but I never guarantee a solution!

Stanfill (UTK): only promise a best-effort execution of the project

-John Fick: **Do you ask for donations for civil and environmental projects?** We are in a rural area and haven't had luck with that

(related response from chat): Nimmy Gnanapragasam (Seattle U): For community benefit projects we recruit a company that serves as sponsors - the company provides funding at the level of 3-5k per project + provides liaison engineers who serve as mentors to the teams.

-Angela Lai: **Who might we work with to draft a contract?** Are these between the students, class instructor, school and company? An NDA?

Mark Anderson (RPI) - just finished going through an update on this with our contracts office. They took our paperwork, put fresh eyes on it, made updates as needed, etc. with the plan that this will now become the campus standard, not just ours. The contract is between the school and the sponsor. Students / faculty / staff can't contract with the sponsor - we contract with our school.

Susannah Howe (Smith) - your grants/contracts/sponsored research office can help. But most companies also have their own internal forms/paperwork.

-Question: **How do you keep a sponsor once you've completed a project?**

UGA: surveys, call sponsors to check in. I have to constantly re-engage and nurture.

MTU: students need to do a good job! A sponsor having a great experience is good. Best: manage expectations with the sponsors from day one. There will always be projects and students that did not do well. Constant coaching of the sponsors regarding expectation management. Hit rate with new sponsor: 20 to 1

Robert: internal champion is vital

-Roger Hilton: **Do you use any assessment tools to gauge the satisfaction of sponsors with the results of the project?** Vice versa, i.e., the satisfaction of the students for the client? How do you use the data as you reach out to companies afterwards?

Susannah Howe (Smith) - I send the sponsors a client evaluation form at the end of each project that asks for numeric feedback (1-5) on a set of items plus open-ended comments. At the mid-point of the year, I also get their feedback on their student team's process, outcome to date, and communication.

Keith Epstein (UVM): Using Edusourced, clients get a survey to evaluate the student teams and the capstone program at the end of each semester (2 semester course). Students get a similar survey to evaluate clients. Similar to Susannah's process.

-Kate Youmans: **Can folks share the time commitment/expectations they have for sponsor interaction with students?**

Susannah Howe (Smith): I tell sponsors that the commitment is 1-2 hours a week. It can vary, of course, such as when the team comes to visit the sponsor site, but it's good for liaisons to plan for a weekly meeting and some time to (briefly) review the team's progress report and/or answer interim questions via email. [Note: having more than 1 liaison is helpful to ensure coverage during travel, etc.]

Christopher Bohn: Steady-state, about an hour a week: weekly sponsor meetings (~30 minutes) and responding to questions.

John Fick: ~20 minutes a week after the initial onsite kickoff meeting. I tell them this will vary throughout the semester. I find this key to successful projects.

Rachel Brown: Seattle U says its an average of 1 hour per week, but suggest they spend more

Beth (RIT): I tell them 12-15 hours if it sounds like they're concerned about the time commitment, but that's a minimum - many clients spend more time. Some spend less and those projects often struggle

Dean Lewis: An hour meeting with the students every 2-3 weeks is what I suggest. Some sponsors want to meet every week, others want a more hands-off approach so only once a month.

-Question:**What is the future of industry relations?**

MTU: morph the program to sunset the activities that no longer work or are in use; stay on top of new technologies; seeing consolidation in industry giving amongst large companies; have to stay engaged with new people rolling into roles at the sponsor. Lots of follow up–wears you down!

UGA: interdisciplinary program across UG disciplines outside of engineering; may see projects with students at all levels Freshman through graduate students; leverage LinkedIn