Panel 4A: Best Practices for Industry Liaisons in Engineering Design Projects: Insights from Students and Liaisons

Facilitator: Edward Latorre-Navaro (UF)

Panelists: Keith Stanfill (UTK), Aaron Hall (Nissan), Cassie Bowman (ASU), Karis Peringson (RHIT Student)

Description: A great industry liaison can truly guide the students to a great prototype, but it doesn't always go this way. Here you'll learn the best ways to get the best experience with your industry contacts.

Notes:

Panel Participants and Roles

Dr. Keith Stanfill: Panel host and facilitator. Edwards assistant dean and director of integrated engineering design at University of Tennessee. He introduced the session, summarized the research motivation, described liaison best-practice categories, and guided discussion among the panelists and audience.

Dr. Robert Hart: Professor at The University of Texas at Dallas. Filled in for Dr. Edward Latorre-Navaro as co-facilitator during the discussion. He helped manage audience questions and microphone flow.

Aaron Hall: Engineer at Nissan North America, working near the boundary between engineering and business strategy. He has served as an industry liaison for multiple student projects, including projects with the University of Tennessee and other universities.

Dr. Cassie Bowman: Research professor at Arizona State University in the School of Earth and Space Exploration. She leads student collaboration opportunities for the NASA Psyche mission and has coordinated hundreds of capstone teams across many universities, including remote and online student teams.

Student representative **Karis Peringson** from Rose-Hulman Institute of Technology: A recent mechanical engineering graduate. The student described the experience from the student side, especially what made the liaison relationship successful.

Best-Practice Themes Introduced by Dr. Keith Stanfill

The facilitator introduced several broad best-practice categories for industry liaisons: allocating consistent time for student teams, reducing delays in communication and decisions, helping students cut through ambiguity, supporting team building, setting high expectations, modeling professional behavior, serving as a conduit to technical or business experts, building relationships with faculty, defining personal goals for the liaison, and escalating issues when resources, budget, or organizational support are needed.

A recurring theme was that capstone projects succeed when expectations are explicit on both sides. Students need to know how to prepare, communicate, document, and follow up. Liaisons need to know how much time they are expected to commit, what kinds of feedback they should give, what resources they should provide, and how to balance guidance with student ownership.

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Latorre, E. and Stanfill, R.K., *2025 ASEE Annual Conference & Exposition*, Montreal, Quebec, CA.

Practice	Potential Benefits	Suggestions to Implement	Metrics for Success
Time allocation	Helps the team to avoid delays. Allows the team to build relationships.	Allocate at least 2 hours per week for role tasks.	Team's requests are filled within one week Meetings allow for conversations outside imminent project needs
Team building	Fosters honesty. Increased student motivation. Student empowerment.	Learn all their names. Treat them with respect. Bring high expectations. Set early expectations for communication. Be a student mentor. Practice inclusivity. Appreciate their uniqueness. Embrace their learning experience.	Open communications Team is receptive to constructive criticism Team success Student positive feedback
High expectations for project deliverables	Team overachieving expectations.	Describe the impact of the project for you and your organization. Describe expectations for their timely deliveries. Highlight enthusiasm for their productivity	Project needs and wants
Lead by example	Liaison professional development. Sponsor organization recognition. Team overachieving expectations.	Carefully review deliverables promptly. Provide student performance comments. If rescoping the project, consider the impact on the team's academic disciplines Assist team in obtaining support items. Practice modesty.	Student positive feedback
Identify a backup or co-liaison	Helps the team to avoid delays. Reduces tasks load.	Enlist the coworker before the project begins. Establish expectations. Share the role trainings.	Continuity of operations Student positive feedback

Practice	Potential Benefits	Suggestions to Implement	Metrics for Success
Faculty relationship	Avoid project delays. Avoid conflicts in student motivation. Avoid team dysfunction.	Establish consonance between the project needs and the course tasks. Establish expectations for communication. Establish expectations for students. Expect training and support before and during the project period. Voice concerns early on.	Faculty positive feedback Uniform student contributions
Define personal goals	Personal development. Professional development.	Establish expectations for the liaison tasks. Periodically review expectations with faculty. Consider student mentorship. Inquire about additional opportunities in the course such as guest speaker or with curriculum input. Embrace your experience.	Student positive feedback Faculty positive feedback Liaison objectives are met
Clarify sponsor expectations	Avoid project delays. Avoid student discontent with sponsor. Avoid scope creep. Avoid student disengagement.	Verify expectations. Confirm allotted time for liaison role. Confirm availability of required resources. Ensure timely escalation of project issues to higher management when needed. Consider impacts on students with disciplines that may no longer be required before rescoping the project.	Project needs and wants. Team's requests are filled within one week. Team positive feedback.

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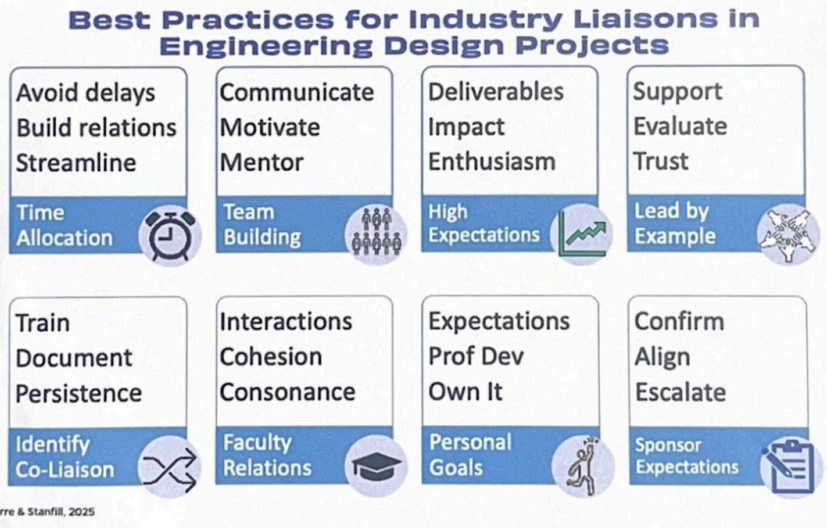
Synopsis

When students work on industry sponsored project design teams, the collaboration experience between teams and industry liaisons is critical for the successful project completion. The end goal of this study is to promote to a deeper understanding of how the role of the liaison contributes towards a successful project delivery and a fulfilling educational experience for both the students and the liaison. This paper presents a comprehensive set of guidelines to ensure a positive and productive experience for the students and liaisons. These guidelines are produced through the collection and analysis of insights from 1) literature of industry sponsored engineering courses, 2) interviews and surveys with experienced industry liaisons, and 3), student evaluations from two capstone courses from two institutions.

The findings suggest a positive correlation between students' satisfaction with the project experience and their satisfaction working with their liaison. Students expect liaisons to provide consistent availability, honesty, and encouraging support. For liaisons, meeting these demands can be challenging without proper training or experience. The liaison experience should also contribute to their own professional development and advance their lifelong learning skills. Through the guidelines below course faculty can help prepare the industry liaisons for their role.



Q&A Report

Q1. Why is time allocation by the industry liaison so important?

Dr. Keith Stanfill: Time allocation is one of the most important liaison responsibilities because student projects can stall when teams wait too long for information, decisions, drawings, budget approval, or access to company resources. Even a regular hour or half-hour each week can prevent avoidable delays and help students maintain momentum.

Aaron Hall: The liaison should be available as a tool for student success. In his own practice, he gives students direct access to him, including phone and text communication, although he recognized that not every liaison can or wants to be that open. He suggested that universities should set clear expectations up front, such as requiring one hour per week, perhaps divided between a meeting and follow-up work.

Dr. Cassie Bowman: For her teams, structured and efficient meetings make the liaison's limited time more effective. She appreciated teams that sent agendas ahead of time, prepared slides, had questions ready, arrived early, and had technology ready. Those habits allowed 30-minute meetings to be useful and focused.

Karis Peringson: Scheduled meetings, clear agendas, and an open Slack channel helped the team communicate efficiently. The students knew when the formal meeting time was, but they also had a way to ask questions between meetings instead of waiting until the next scheduled session.

Q2. What should students do before meetings with liaisons?

Dr. Cassie Bowman: Students should send an agenda ahead of time, prepare slides or supporting materials, identify the questions they need answered, and arrive early enough that the meeting can begin on time. She emphasized that this is not always the norm, but when students do it well, the meetings are much more productive.

Aaron Hall: Early meetings can be awkward because students often hesitate to speak. A prepared structure helps reduce that awkwardness. Students should know the key topics they need to cover from the first meeting onward, because preparation supports both project progress and team building.

Karis Peringson: The team was taught that meeting a liaison means presenting oneself as a professional engineer. They prepared agendas to avoid dead time, prioritized questions, and used the scheduled time carefully because the liaison would not always be available. For the first meeting, the agenda was treated as a formal deliverable and part of the grade, which helped establish the habit.

Audience member said: One sponsor gave direct feedback that students should not merely be on time; they should be ready five minutes early. If a meeting starts at 2:00, the team should already be set up and prepared at 2:00, not still loading slides or solving technical issues.

Q3. How can programs help students develop professional meeting behavior?

Karis Peringson: The first meeting agenda was required and graded. That structure created motivation, showed students why preparation mattered, and helped them experience how much better a meeting goes when the team is organized.

Dr. Keith Stanfill: Faculty and coaches need to scaffold the initial client meeting and recurring meeting process. He referenced examples from colleagues who provide strong structures for students. He also described a case where a business coach gave students very direct feedback after they opened a client meeting by listing conflicts and limitations. The coach told them that, in industry, that approach could have gotten them fired. Although harsh, the feedback got their attention and helped reset expectations. Resources for planning the kick-off meeting (a.k.a. Start of Work Meeting) and general project meetings are available here.

Dr. Cassie Bowman: Not every program has an extensive coaching structure. Some programs have only the liaison and students, with minimal faculty involvement. In those cases, liaisons and instructors can still communicate expectations clearly, even if the structure is less formal. She cautioned that not every school has a large support system, but successful projects can still happen with practical communication and flexibility.

Audience member said: A team charter assignment can help. In the first week, students can define team roles, meeting preparation practices, communication rules, and expectations before the sponsor kickoff. This lets students create their own operating agreement rather than simply being told what to do.

Q4. What value does the liaison personally get from participating?

Aaron Hall: For him, liaison work is a leadership development opportunity. As a mid-level engineer who wants to move toward management, mentoring students and managing capstone interactions can be part of his professional growth. He also noted that universities can pitch this benefit to industry sponsors, but companies should still vet liaisons carefully to make sure they will create a positive student experience.

His own poor capstone and internship experiences made him want to create a better experience for students. Because he had seen what limited support felt like, he wanted to be a stronger mentor and liaison.

Dr. Cassie Bowman: As an educational researcher, she enjoys student learning and sees student collaboration as one of the most rewarding parts of her job. She also said that scientists and engineers often enjoy interacting with students because it reminds them why their technical work matters and reconnects them with the exploratory spirit of space exploration.

Audience member said: For small companies with few employees or no engineers, the liaison's goal may be less about personal professional development and more about the value the company receives from the project. The best way to frame the liaison role may depend on the size, structure, and motivation of the sponsoring organization.

Audience member said: Liaisons should be honest and give direct feedback because capstone is a safe learning environment. If students do not receive feedback, they cannot learn what is professionally acceptable.

Audience member: Some industry people are comfortable giving critical feedback to employees but hesitate to give the same feedback to students. They may praise students during meetings, then complain privately afterward. The better approach is to treat students as people who may be working professionally in a few months and give them the feedback they need now.

Q5. What happens when the assigned liaison is not engaged or changes during the project?

Audience member said: One challenge is that the person who agrees to sponsor the project is not always the person who later shows up to work with the students. Reorganizations, role changes, layoffs, and reassignment can result in a new liaison who does not know the expectations or does not want to be involved.

Audience member said: Students should be told what to expect from an industry supporter and should contact the instructor quickly if they are not receiving communication or resources. They should not wait four weeks. They should email, text if appropriate, call, leave a message, and then involve the instructor if they still cannot get a response within about a week.

Dr. Keith Stanfill: When a liaison is disengaged or replaced, faculty may need to go back to the company contact or leadership to reset expectations. The conversation can be framed around the liaison being time-constrained rather than personally unsuitable, which makes it easier to find a solution.

Q6. What qualities or attitudes make a strong liaison?

Dr. Keith Stanfill: A good liaison often has a mentoring attitude or the heart of a teacher. Some experienced professionals, including people later in their careers, may find mentoring students especially satisfying because it connects to legacy and professional contribution.

There are also boundaries. He described a case where a liaison became too informal with students during travel, creating risk-management concerns. A liaison should be supportive and personable without crossing professional boundaries.

Dr. Cassie Bowman: Liaisons should care about students as people, not only about project outputs. She described briefly checking in at the end of meetings by asking students how they are doing personally. Usually the answers are light, but sometimes the check-in reveals that a student needs support. Universities often have resources that companies may not know about, so liaisons should be encouraged to report concerns when something feels wrong.

Aaron Hall: From the industry side, getting the right liaison depends heavily on the pitch from the university. Universities should clearly tell companies that they need someone engaged, responsive, and willing to provide continuous value. The expectations should be explicit from the beginning.

Q7. How to identify good liaisons?

Aaron Hall: Some people hear “college project” and immediately view it as a burden. What helps him recruit internal support is having strong executive-level materials from the university that show what previous projects produced and how the company benefited. Those materials help him demonstrate value to colleagues.

An executive sponsor inside the company is important. If a liaison moves roles or must hand off the project, the executive sponsor can help maintain continuity and delegate responsibilities to a new liaison.

Dr. Cassie Bowman: When recruiting people to contribute to student projects, she respects their time by keeping meetings to 30 minutes and making it clear that they may leave early if needed. She does not share people’s contact information unless they offer. She also looks beyond the immediate mission team to find experts with relevant interests, such as someone passionate about Stirling engines.

Q8. How to motivate students? How can instructors motivate students to behave professionally when it is not their natural habit?

Audience member said : An audience member returned to scaffolding and asked how to motivate students who do not naturally arrive early, prepare agendas, or communicate professionally. The speaker emphasized that such students are not bad people, but professional preparation may not be their default behavior. The question was how instructors or liaisons can change these behaviors.

Karis Peringson: Her team may have been naturally organized, but the instructor also provided strong early scaffolding. Professionalism was part of the grade. For the first meeting with Dr. Bowman, the agenda had to be emailed both to the instructor and to Dr. Bowman as a graded deliverable. If the team did not submit it, they would not receive credit. That first requirement helped them experience how much better the meeting went when they were prepared.

Dr. Keith Stanfill: He emphasized the importance of coaching. He gave credit to educators who had developed strong scaffolding for initial client meetings and recurring meetings. He also said faculty mentors need to be honest with teams when their behavior would not be acceptable in industry.

He returned to the Lockheed Martin example. In the first meeting, students began by telling the client what they could not do and why certain things were impossible. A business coach later told them directly, “I would have fired you on the spot.” The direct feedback got the students’ attention. Keith argued that students want to please the company and the liaison, so honest feedback from coaches and liaisons can be powerful.

Dr. Cassie Bowman: She reminded the audience that not every program has a large support structure with coaches, guides, or faculty mentors. Many programs she works with involve only Cassie and the students, with limited faculty or TA involvement. In those contexts, liaisons can still communicate expectations directly, but programs should not feel bad if they do not have a perfect structure.

Aaron Hall: He distinguished between philanthropic projects and projects where the company expects a concrete output. For more philanthropic projects, professional structure may be lighter. For high-investment projects where companies pay large amounts and expect deliverables, professionalism must be built into the program. As an industry participant, he only pursues capstone projects with professional expectations because without professionalism, he will not get the results he needs for the company.

When students are not engaged in a high-expectation project, Aaron is direct with them. He tells them they are not meeting expectations, that the work may be hard, and that they agreed to pursue the project outcome at the beginning of the year. In less structured, more philanthropic projects, he feels he cannot be as direct because professionalism has not been built into the program in the same way.

Audience member said: Another participant described using a team charter in the first week. Before the sponsor kickoff, students work through roles, meeting preparation, team agreements, and expectations. The goal is not simply to tell students what to do, but to guide them to define their own professional norms.

Q9. How much agenda preparation did the student team do before each liaison meeting?

Karis Peringson: Karis said the team delivered the first agenda two or three business days before the meeting. For later meetings, they tried to send it at least one business day before the meeting. They knew their meeting schedule in advance because they had a schedule for the quarter.

The team met for about 30 minutes every two weeks. Before each meeting, they reviewed what they had worked on, identified the most important questions, and prioritized those questions so the meeting time could be used efficiently. The agenda was essentially a prioritized list of questions sent ahead of time.

Q10. At Nissan, are capstone projects handled only by one liaison or by a broader group?

Aaron Hall: Aaron said he is not the capstone group at Nissan. A director gave him a broad idea, and Aaron identified capstone as the best way to get a result for Nissan. On the manufacturing side, Nissan has a group for whom facilitating capstone projects is part of their responsibilities, though not their primary job.

Audience member said: The follow-up question asked whether that group is trained or experienced in the interface.

Aaron Hall: Aaron said they are experienced, but the training is not formal. Much of it comes with time and repeated involvement.

Q11. How should industry liaisons give direct feedback instead of only praising students?

Audience member said: A participant observed that industry people vary in how comfortable they are giving feedback to students. Some are comfortable giving feedback to employees but hesitate with students. They may praise students during formal meetings, then privately complain to faculty afterward. The participant argued that this does not help students because students never hear the feedback they need.

The participant tells industry supporters that students may be working for someone like them in eight months, so they should treat the students as future professionals. Holding back constructive feedback does not prepare students for employment.

Aaron Hall: Aaron said that the core purpose of capstone is student development. Other benefits, such as company deliverables, are secondary. Therefore, universities should tell liaisons early that they are allowed to give students the feedback they need and deserve.

Audience member said: The participant agreed that treating students with “kid gloves” is not helpful.

Aaron Hall: Aaron added that telling a student they are doing great work when they actually need improvement benefits no one. He compared it to telling a four-foot person they will make the NBA: it may sound kind, but it does not help the person improve or understand reality.

Q12. How can universities identify strong liaisons inside corporations?

Audience member said: Audience from Texas A&M said her office recruits capstone projects across majors in the College of Engineering and sees a wide range of sponsor responses. She asked how universities can find people like Aaron inside corporations, especially when some partners rely on personal connections and others simply tell the university that the company will identify someone internally.

Aaron Hall: He thanked her and said universities often set up projects through the corporate side of companies. He suggested trying to get both the executive director or executive sponsor and the liaison in the same room when expectations are established. That way, the executive sponsor understands what the liaison is expected to provide and can set internal expectations.

He also suggested that universities may be able to find potential liaisons through professional-development functions within corporate human resources departments. Many companies have groups focused on employee development. Even if the exact group name is unclear, universities may be able to use LinkedIn or internal contacts to identify people involved in professional development. Since liaison work can be leadership development for employees, those people may help identify suitable candidates.

Q12. What did students like most about successful liaisons?

Karis Peringson: Students appreciated predictable 30-minute meetings, clear communication, an efficient use of time, and personal connection. Brief personal check-ins helped students feel that the liaison cared about them as people, not just as producers of project deliverables.

Students appreciated straightforward technical feedback. One student said the liaison was clear about what ideas were acceptable, what ideas were weak, and what needed evidence. That transparency prevented the team from wasting time on unrealistic concepts while still allowing them to explore.

Students also appreciated being connected to relevant stakeholders. In one internal university project, the team met the research lab and company leaders connected to the project, which helped the team understand the system, stakeholders, and expectations.

Students did not appreciate unclear expectations, skipped meetings, late meetings, or an overly informal relationship that made the project feel less professional. A friendly relationship is valuable, but there still needs to be a clear schedule and professional structure.

Student 1 said: A Rose-Hulman student, not from the Psyche team, said their client helped keep the team on track. When the team was unprepared for meetings, the client gave direct feedback that such behavior would not be acceptable in industry. The student appreciated that because it helped them contextualize and improve their behavior.

He said their team did not appreciate the lack of initial expectations. The project was very vague, and the client expected the students to determine too much about what the project should be. The student contrasted this with the Psyche project, where the project area and creative challenge were clearer.

Student 2 said: student said they appreciated a liaison who was straightforward about what she was and was not comfortable with. When the team considered unorthodox ideas, she did not simply agree to everything; she asked them to show whether an idea could work or told them clearly when she did not think an idea was good. That transparency provided important guidance.

Student 3 said: Another student in the same team of student 2 added that the liaison still allowed the team to work through ideas and test results instead of simply telling them exactly what to do. This reinforced that the project was for student learning.

Student 4 said: They appreciated access to executive owners and relevant stakeholders, which helped them understand what different people wanted and how the system worked. However, as the year progressed, some meetings became informal, skipped, or delayed. The student said there needs to be a balance between a friendly relationship and the fact that the team still has a job to do.

Q13. How much freedom should students have to develop their own solutions? (Comment from Q12)

Aaron Hall: Student creativity is one of the key benefits of capstone. Students may propose ideas that industry would initially resist, but some of those ideas may work and create value. Universities should emphasize this creative value when communicating with industry sponsors.

Audience member said: He often struggles with industry supporters who want to impose a solution on the team. He tells sponsors to describe what they want, not how they want it done. Students are not technicians hired to implement a sponsor's design; they need to develop and evaluate their own concepts.

He advises sponsors to keep their own design ideas in their back pocket until after the students present alternatives and recommend a direction. Students may lack experience, but they are also creative and not constrained by the same assumptions as industry professionals. If students see the sponsor's solution too early, that becomes the solution and the sponsor loses the benefit of student creativity.

Dr. Keith Stanfill: Students do not have the benefit of experience to cloud their judgment. This lack of experience can be an advantage because they may generate creative ideas that industry professionals would not consider.

Dr. Cassie Bowman: She added that many of her projects do not have one right answer. That is one reason she wants to work with students: they can think outside the box. She encourages students to use capstone to their own advantage, such as showcasing skills for a desired job, learning a software package, or filling gaps in their undergraduate experience.

Q14. How to reset expectations for continuous projects? How should continuing projects be handled when a new student team inherits previous work?

Dr. Cassie Bowman: Expectations should be adjusted to each team. Some teams are superstar teams and can accomplish a great deal. Other teams may accomplish less, but still learn and contribute meaningfully. Liaisons should use strong previous projects as exemplars, not as rigid standards that every future team must duplicate.

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Aaron Hall: A liaison should account for ramp-up time when a new team takes over. He described a high-performing team that requested a major direction change halfway through the project. Because the team had

earned trust, he allowed it, even though it affected a related team and required coordination. With a slower team, he might have required them to stay on the original path.

Dr. Keith Stanfill: Continuation projects are challenging because the next team will often want to redesign what the previous team did. Programs should not expect a second team to add another full 100 percent of progress on top of the first team's work. Often, the next team may produce 40 to 60 percent additional progress because they need time to understand, evaluate, and sometimes revise earlier work

Karis Peringson: For continuing projects, previous teams should write documentation as if they are handing the project directly to the next team. Reports should explain what was done, what remains unfinished, what future steps are recommended, what parts were selected or considered, and what groundwork has already been completed.