TECAID Case Studies:

Preparing Engineering Faculty to Lead Department Change in Diversity, Equity, and Inclusion

TECAID Case Studies explore key arenas for planning and making departmental change related to diversity, equity, and inclusion. Topics include: Working as a Team on DEI Issues, Gathering Strategic Information for Planning DEI Change, and Effectively Navigating Conflict while Engaging in DEI Change Efforts.

Diana Kardia, Karen Williams, Mark Chesler of Kardia Group, LLC

In collaboration with Elizabeth Litzler, Emily Affolter, Robbie Bravman Marks, Gretalyn M. Leibnitz, C. Diane Matt, Aisha Lawrey, Thomas Perry and Klod Kokini

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About TECAID

In 2013, the WEPAN Board of Directors articulated the vision of an inclusive engineering culture that would support the success of women and other groups that are underrepresented in engineering colleges. In 2014, WEPAN began a new collaboration with the American Society of Mechanical Engineers (ASME); Purdue University; the Kardia Group; and the Center for Evaluation and Research for STEM Equity (CERSE) at the University of Washington. Together, we proposed the Transforming Engineering Culture to Advance Inclusion and Diversity (TECAID) project for National Science Foundation funding.

TECAID was funded and launched in October 2014. During the following 2 years (2015-2016), five teams of faculty, chairs, and staff from Mechanical Engineering departments across the U.S. worked intensively with each other, with the project leadership team, and with a team of subject matter experts to gain the knowledge, skills, strategies, and awareness most relevant to changing the complex academic environment. Feedback from TECAID participants revealed significant learning about inclusion and diversity as well as departmental leadership.

The TECAID Case Studies are an outgrowth of this work.

For more information about this project and its resources, visit the TECAID website.

Acknowledgement

About the TECAID Case Studies

The TECAID Case Studies presented here explore key arenas for planning and making departmental change related to **diversity, equity, and inclusion (DEI)**. They represent critical foci of TECAID's professional development work and the experiences of TECAID's participating Mechanical Engineering Department Teams in making change.

The topics addressed - **Working as a Team on DEI Issues; Gathering Strategic Information for Planning DEI Change; and Effectively Navigating Conflict While Engaging in DEI Change Efforts** – were chosen because:

- These topics reflect critical issues with which TECAID teams struggled.
- They are applicable to a wide range of DEI-related challenges and an equally wide range of DEI solutions and strategies.
- The applicability of these topics is not dependent on particular local conditions or resource availability.

Each case study case contains two components: (1) a fictional circumstance through which a topic is presented, and (2) strategic pointers. These case studies can be used independently or in conjunction with related TECAID materials you will find on the TECAID website at: http://www.wepan.org/mpage/TECAID

About the Case Studies Terminology

Equity: Note that *Transforming Engineering Culture to Advance Inclusion and Diversity* (TECAID) does not include "Equity" in its title, and yet the TECAID Case Studies refers repeatedly to diversity, equity, and inclusion (DEI) change. As the project progressed, the PI team members' awareness and knowledge deepened regarding TECAID's values, and it became clear that diversity and inclusion were not comprehensive enough. An equity orientation takes the notion of diversity (representation) and inclusion (welcoming diversity in infrastructure, policies, and practices) and overlays a social justice point of view. Equity acknowledges that all identity groups are *not* treated equally in society, and therefore, cultivating fair and just ME cultures requires approaches to change that meet the different needs of diverse groups.

URM: The term Underrepresented Minority (URM) can encompass people with identities that are not dominantly represented in your Mechanical Engineering department. This term can include, but is not limited to: women; people of color; English Language Learners; newcomers or immigrants to the U.S.; LGBTQ people; and people with disabilities. URMs can include people with multiple (or intersecting), non-dominant identities like a woman of color--or people who have dominant and non-dominant identities, like a white, transgendered man. TECAID's primary focus was on racial, ethnic, and gender diversity.

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Case Study 1

Working as a Team on DEI Issues: The Challenges and Benefits

Most change efforts involve multiple individuals working together in a coordinated manner. However, in academia, most faculty work independently in the majority of their endeavors - with faculty meetings and committee work as their only reference points for collaborative efforts outside of their specific research programs. Thus, a major challenge faced by faculty engaging in change efforts is the process of effectively building and utilizing a change team.

This case study demonstrates how a team-building experience, like the one promoted through TECAID, helps a diverse collection of individuals become a cohesive unit.

In Case Study 1, you will see how several faculty members:
- Came together to work on a departmental problem.
- Progressed from a collection of individuals to an effective working team.
- Made positive use of different members' points of view.
- Over time, continued to address interpersonal issues and academic norms in order to maintain and continue to develop good teamwork.

The Case Study

Like the other teams, Team PQU came into the TECAID process excited about the possibilities for creating a more diverse and inclusive climate in their department. A primary concern was their department's difficulty in hiring and maintaining a critical mass of female faculty members.

The team itself featured some rank and gender diversity:
- Steve, the newly appointed male department chair and full professor
- Lee, a male full professor
- Rory, a male associate processor
- Aileen, a female assistant professor

The team also represented a variety of DEI-related views and concerns. A question that concerned them was: How could the team work through its own differences to be an effective agent of change?

During one of the TECAID workshops, participants were asked to reflect upon and share their social identities (such as race, gender, ability, and sexual orientation) and their experiences and feelings regarding discrimination and privilege. For many participants, talking so explicitly with strangers about their personal backgrounds and experiences felt awkward and edgy – and talking with people from their own departments was **really** uncomfortable. These kinds of issues are seldom talked about directly among engineers in academia, even though they affect everyone's experiences and thinking— and certainly how people interact with one another.

In Team PQU, Lee and Rory noticed this awkwardness when their team came back together later in the day. They saw that Aileen's interactions with them (and with Steve) were even more constrained and formal. Lee and Rory talked to each other about the situation during a break but were not sure how to change it. From what they could tell, Steve did not seem to feel the awkwardness.

Steve, meanwhile, was noticing that Aileen wasn't participating as actively as the other two. Steve decided that as chair, he should cut back on his own participation to leave more room for Aileen to join in. Aileen was also impacted by this exercise, but in a hopeful way. With the level of awareness these exercises demanded, Aileen felt hope that something interesting might happen. She observed her colleagues tentatively to see how each of them might manifest their now-enhanced awareness of the interplay between social identities and interpersonal interactions.

This initial set of observations and conclusions – about themselves and about each other – established a pattern. Steve, the department chair, stood back, withholding his own contributions with the intent of empowering other team members. Rory contributed ideas on his particular interests. Aileen also contributed ideas based on her interests, but she primarily held back. Lee's solution was to actively support the team and be willing to do whatever the team decided - but he did not contribute ideas.

The team became increasingly aware that their interactions were uncomfortable, but because aspects of their pattern were so familiar and normal in an academic context, they were difficult to recognize. (Recognizing hidden or not-quite-conscious patterns is one of the key challenges of DEI work overall.)

Because the team was committed to finding a way to do this work, they continued talking to each other outside of meetings about what they might do to make their meeting dynamics work better. Aileen and Rory were increasingly feeling the discomfort and began to question whether it was wise to participate in these efforts – especially since they were both coming up for tenure/promotion soon. While talking through their options over coffee, Aileen and Rory identified their discomfort: they were revealing significantly more in team discussions than were Steve and Lee.

Aileen and Rory then took the risk of bringing this up to Steve and Lee. Both men were a bit shocked: they had been consciously trying to be empowering. They quickly saw, though, that they were actually interacting with Aileen and Rory a bit like they would with students - rather than with colleagues - creating hierarchical team dynamics. They gladly agreed to change how they interacted within the team. From these two acts of courage, the team created both a bond and a precedent for the rest of their work together.

A bond, however, does not mean an absence of conflict. As the team worked together to identify the underlying problem behind their attempts to hire more women faculty, they ran into disagreement. Defenses went up and discussions got heated with team members each advancing their own perspectives. The dynamics shifted when Rory changed gears and advocated for Aileen's perspective, realizing that she shared identities similar to those they were seeking to hire, and that she knew what it felt like to

be female in this mostly male department. Rory (once again demonstrating courage) suggested that he and the other men might have been subconsciously devaluing or even dismissing Aileen's perspective because she was a woman.

The team was now clued in to the value of entering uncomfortable territory like this and plunged right in: they each talked about a way they had dismissed someone else's contribution. With this in mind, they started making more use of the whiteboard in the meeting room, capturing the various perspectives being offered and visually mapping the relationships between their ideas. They realized that their collected ideas actually gave a much better picture of the situation than any one individual's specific idea – and that this was a major benefit of working in a team. They decided to adopt an intentionally inclusive approach to gathering ideas as they went on.

Over time, the risks, willingness, and effort put into team dynamics paid off in many ways. The team became increasingly resilient in its efforts to make change – and these more effective discussion dynamics played out in other arenas. Additionally, as they began implementing pieces of their project, team members also provided support and served as a feedback mechanism for each other.

For example, Lee and Aileen began leading discussions on diversity and student teams in their classes. Early discussions resulted in some confusion and harsh feedback from several students. Without the support of their teammates, they might have been unwilling to take the risk of "stepping out," and might have been discouraged enough to drop the discussions. However, the team support and troubleshooting inspired them to continue, resulting in rapid improvement in the depth and quality of the discussions they led.

Ultimately, Steve, Lee, Rory, and Aileen found that their experiences as part of this team supported their overarching project goals, while enhancing their abilities as individuals to work with other faculty, staff, and students as well.

Note: The authors are mindful that the four participants discussed were not attributed racial identities. Since race was not mentioned, did you make an assumption about the participants' racial identities? Did you, for example, assume that because no racial identities were provided that the group shared one similar identity? If so, what might this tell you about your internalized bias or experiences with those in the field?

This case study isolates and highlights gender identity and professional status. Racial identities can also play an important role in group dynamics. Consider attributing different racial identities to the participants. How might the participants interact differently based on this additional information? If the four participants represented different racial and/or ethnic backgrounds (in addition to different gender identities and professional statuses), then this case study would involve navigating more nuanced power dynamics within the team, not only gender bias and a professional hierarchy, but also likely internalized biases based on race and ethnicity.

Note that other social identities, such as religion, class, and sexual orientation, may also come into play. How would you work with these additional social identities? What additional awarenesses might be needed, and how could they be cultivated? What additional gains might come from a team with more kinds of diversity?

Strategic Pointers: Working as a Team

Why a TEAM rather than a collection of individuals?

Change in any environment can be hard. Individuals working alone can make change, but can also burn out. Creating a team of change leaders or catalysts - knowledgeable and committed individuals - can increase the odds of success.

Working in a team has two obvious benefits: Members split up the work, and they are a source of support and feedback for each other. Additional significant benefits emerge when the team is willing to go beyond the "support-and-division-of-labor" version of teaming, as the team in this case study did. Some of the particularly helpful benefits for this team working with DEI change included:

- **Focus**: Once back in the everyday flow of the department, in the rush of other priorities, maintaining focus on a change project became much more difficult. Having a team that shared the change project priority really helped maintain focus.
- **Increased energy**: Working together and dividing up tasks helped avoid burnout. Collaborating on tasks, seeing the successes of teammates, and learning together through observation and courageous feedback generated more energy for the team.
- **Attraction**: The team created its own kind of gravitational center. Other faculty and staff in their department became interested in and drawn to their project. With the additional participation, the team was able to accomplish more.
- **Team practice:** Team interactions are an excellent testing ground for changing awarenesses because they usually start out with some deep assumptions related to professional hierarchy, gender, rank, position, race, department culture, etc. Participants were generally used to following the chair's lead, but this TECAID process required more balanced contributions from all team members. Through this practice, team members more quickly and effectively developed their ability to support a diverse, equitable, and inclusive environment in the department as a whole.
- **Team modeling:** The change team itself can be a model of the kind of multicultural organization being proposed, both in its membership and in its ways of working. Indeed, team-building issues are a microcosm version of DEI issues generally: communication, vulnerability, interpersonal awareness, skills, power, etc.

Success in forming and sustaining a team depends upon active monitoring and guiding of the process. Though all team members are ultimately responsible for this, it is critical that the senior (i.e., more powerful) members of the team initiate this, and maintain their commitment to such issues as:

- Maintaining diversity in approach. A change team must itself be diverse, including people from various social identities and different roles and ranks within the organization. At the same time, no team will be representative of every aspect of social identity, rank, or role. What's most important is that the team learns how to make use of the diversity it includes and supplement those perspectives as needed. Expert support via multicultural team-building activities and explorations can help a group quickly develop into a diverse and effective team.
- Managing power dynamics. Central to such team development is the management of competition for idea supremacy, for the assertion of privilege (or the retreat into withdrawal), and the balancing of voice and power among members.
- Attending to how members relate and work with one another ("group dynamics").
- Attending carefully to conflict (experiences of difference) and developing skill in dealing with conflict within the team.
- Establishing and discussing guidelines about the confidentiality of team discussions as well as transparency with colleagues.
- Encouraging open exchange about:
  - the personal and organizational resources that each member brings to the effort.
  - the personal and career risks and vulnerabilities that this work on the team's change effort may create for each member.
- Watching for signs of overload and exhaustion.
- Generating and gaining an ongoing sense of commitment to a shared vision and project.
- Preparing to go outside the team to bring in colleagues: faculty or staff members who have special information and resources relevant to the change effort. Remember, all new members or non-team allies bring with them new sets of dynamics and issues.

New team members

Once you have built a team, you will at some point be faced with either replacing a team member or enlarging the team. Here are a few tips on how to approach either situation:

Recruiting

- Reach out carefully and selectively to potential allies — to colleagues who you think/know are interested in and supportive of the project – and determine

whether they have the time and energy to commit to team meetings.
- As you choose, consider a variety of factors including: diversity in rank, role, sub-discipline, demographic characteristics, skill in working with others, and commitment to the related issues.
- Cultivate the larger group of stakeholders to create potential new team members. (You may also want to expand your concept of who the stakeholders are.)

Bringing them on board

- If people are interested in coming on board, bring them fully up–to-date on the development of the project so far: where your team is, as well as how you all got there.
- Solicit their ideas and reactions. This is not a "one-way sell." New members must see that you are open to their ideas, and that their contributions will make a difference.
- Come to an agreement with new members about which current and future tasks they are prepared to undertake as well as the time and energy associated with those activities.

Case Study 2

Gathering Strategic Information for Planning DEI Change

Many change efforts experience a sense of urgency, having coalesced in response to an acute sense of a need for change. However, effective action is predicated on excellent planning and preparation. Do we understand what motivated us to come together? Do we accurately perceive the underlying issues, and can we distinguish symptoms from problems? How well do we understand ways our specific local context both enables and hinders this kind of change? The first challenge facing change efforts is the due diligence of strategic intelligence gathering.

This case study demonstrates a productive approach to strategic intelligence gathering – specifically in a case related to diversity, equity, and inclusion (DEI) change. This includes:
- thoughtful and effective data collection in response to an acute problem.
- resolving and making productive use of differences in how individuals perceive the problem.
- analyzing the conditions for making change.

Note: In this case study, the term Underrepresented Minority (URM) can encompass those with identities that are not dominantly represented in your Mechanical Engineering department. This term can include, but is not limited to: women, people of color, English Language Learners, newcomers or immigrants to the U.S., LGBTQ people, and people with disabilities. URMs could include those with multiple or intersecting non-dominant identities like a woman of color, or those who have dominant and non-dominant identities, like a white, transgendered man.

The Case Study

Recently, several undergraduate URM students approached their faculty advisors with concerns about their experiences in the department. In some classes, they had been excluded from student lab teams. They'd also experienced taunts from some white and male peers about their competence. One faculty member gathered these students' concerns and brought these issues to the Chair.

This was not good news for the department. These faculty foresaw the possibility that such concerns could lead to competent students underperforming and perhaps even leaving their department - thereby making it even more difficult to recruit a diverse student body in the future. They were also concerned about the lack of professional conduct on the part of white and male students as well as the possible inattention or unresponsiveness of faculty.

The Chair decided to create a Task Force focused on two issues: Diversifying the student social (racial and gender) climate of their department and introducing some sort of instruction or discussion about diversity into a portion of their curricula and class plans.

The composition of the Task Force itself represented diversity of rank/status, race, and gender; it included the Department Chair, Associate Chair, two senior tenured faculty members, two junior faculty members and the department's chief secretary. Collectively, this group was comprised of one woman of color, three white men, one man of color, and two white women - all important sources of information for the varied experiences and concerns the Task Force needed to understand. Additionally, two members of the Task Force had participated in TECAID and were able to bring tools they learned through TECAID to the work of the Task Force.

The Task Force wanted to have an organized assessment of the current situation in the department. They hoped that strategic intelligence would benefit their planning, and they wished to take advantage of the benefits such information and perspective would have for a change effort.

The Task Force discussed the possibility of commissioning a cultural audit or a systematic survey of departmental students - but felt that they lacked the financial resources for such an effort. They also understood that it would take a significant amount of time to conduct a formal and comprehensive audit/survey, further delaying the timeline.

They decided instead to start by systematically pooling the knowledge of Task Force members themselves to provide a good initial picture of the local situation. They felt that their group represented sufficient departmental diversity to provide at least some direct insight into the various ways people experienced the issues of departmental climate and inclusion. Together, they made a list of the observations, hypotheses, and questions emerging from their discussion.

With this in hand, they each reached out for informal discussions with some of their colleagues, staff members and small groups of students in order to gather more information. Task Force members made sure to talk with colleagues who they felt had significant influence and standing in the department – and whose reactions might be critical in decision-making down the road.

When the Task Force next met to discuss what had been learned, they found that what had formerly felt like productive and relatively easy collaboration now seemed more difficult. Various team members disagreed about the importance of some issues and the discussion became a bit heated: "That's not important - no one I talk to thinks that. It shouldn't be on the list." "Well, you're wrong. I've heard it from students and from at least three faculty." "Oh, really? Which ones? Who said it?"

These conversations also brought up questions about key people and factors that might be operating at several different levels of their department. "All this climate discord will be resolved when Dr. Spherington-Pharc retires, right?" "There's a question out there about why Dr. Mingston didn't get tenure. The process is just so opaque, but some are saying it is related to the climate/culture the students are experiencing."

Fortunately, they soon realized that these different viewpoints and tensions were a symptom of a larger problem. The status quo in the department was a bottleneck of

different opinions, observations, experiences, and priorities – and their discussion was now a reflection of that larger status quo. If they were to be successful in leading the department past this bottleneck, they would first have to find ways to navigate it themselves.

They decided to include in their list of concerns issues that not everyone agreed upon – but that at least some members felt were quite crucial. In this way, they informed their analysis while also laying the groundwork for important future discussions about these matters.

To see how others dealt with similar climate and culture matters, they collected and read several diversity-related climate change plans from different departments within the university – and also from engineering departments at other universities similar to their own. Additionally, they looked at surveys, focus groups, and town meeting discussion notes compiled by others. While not specific to their environment, these resources were a rich source of insight about the status of gender, race, and ethnicity in their field.

Through all this information gathering plus further discussions with colleagues and student representatives, the Task Force collected an extensive list of ideas for possible next steps. How, then, could they prioritize them to map out a course of action?

Task Force members who'd participated in TECAID had learned to use a "force field analysis" (FFA) to understand situational dynamics. (For more information, see the "Strategic Pointers" section below.) Together with their Task Force teammates, they worked on identifying the resources and barriers listed on this FFA diagram:

Force Field Analysis for Introducing Diversity-Related Curricula and Discussion to the Undergraduate Program

Forces supporting the change effort ["Resources"]	Forces resisting the change effort ["Barriers"]
Individual	
● Several female faculty see the need ● Strong current chair leadership for project ● ME alumni willing to come and talk about DEI issues ● Student leader can explain situation	● Senior colleague very critical of DEI agenda ● People's unconscious stereotypes and prejudices ● Some faculty unclear about chair's priorities ● Faculty worried about department's focus on engineering issues
Leadership team	
● Strong shared desire to improve situation ● Team members working well together ● Good team race and gender mix	● Time available to work on project ● Team members have some solutions ● Team member going on sabbatical
Department	
● Student concerns about discrimination/exclusion ● Current Chair has made this project a priority ● Potential to be seen as a leader on DEI ● Staff often hears about students' complaints	● Few faculty know about the problem or the projected solutions ● Some faculty resistant to "soft" stuff ● Staff excluded from curricular issues ● Student unawareness (disregard?) of situation ● Faculty fears of change
Externals	
● TECAID consultant coming to do faculty workshop ● Good ideas from other TECAID teams	● Parent's letter about DEI as waste of time ● Collegiate funds for getting scarce

With this diagrammatic assessment of the situation, the team discussed ways to initiate change by altering the force field: shifting the current balance of resources and barriers. They knew that research on departmental change has shown that creatively engaging this process is key to successful change efforts.

First, they considered **adding to the resource list**. For example, they discussed ways to address the aggrieved students' concerns by increasing everyone's understanding and awareness such as: bringing a campus diversity officer to give a lecture in a first year class; developing a three-hour module on DEI issues to be introduced into sophomore classes; or creating an elective course on "diversity issues in engineering careers".

They also considered **reducing some of the faculty barriers to change** by compiling (without names or identifying characteristics, of course) a brief document of what they heard from students and colleagues about their departmental experiences. Thus, a larger portion of the department would understand the painful situations some students encountered -- plus the dangers to recruitment, to their own success, and to the department's success that these experiences posed. This process could reduce the "negative force" or barrier of faculty lack of knowledge about the problem and related resistance.

At a later meeting, when these possible actions were discussed, it suddenly occurred to one team member that they didn't know who could develop such a lecture/module/course or lead such discussions with students. No faculty member had ever taken or taught that kind of course. That discussion led to the listing of another barrier: no one able to provide the DEI material to students. It further led to an inquiry into where such expertise and teaching competence was available – on their own campus or elsewhere.

Eventually the Task Force identified some faculty in their own university's School of Education with the right expertise who were willing to meet and discuss how they could be helpful (an added resource!). In addition, the Task Force learned that some engineering department teams involved with the TECAID project had already developed curricula for students. Those resources were added to the "Resources" side of their force field.

Through this collaboration, the Task Force developed a DEI presentation that they decided to deliver in one of the large, required sophomore classes. Some of their staff heard directly from students about the impact of the presentation. Consulting their FFA, the Task Force realized that, for more impact, some of their presentation content might best be delivered by alumni. The Task Force then created a presentation team comprised of alumni, faculty, and their School of Ed colleagues. They asked staff to keep an ear to the ground to help discern the presentation's impact. The presentation was customized to provide specific advice about creating a dynamic and inclusive environment in lab courses. The Task Force also developed a companion presentation for faculty so that faculty would become more effective, active participants in creating inclusive learning environments in the labs.

With this well-developed plan, including multiple mechanisms for ongoing collection of feedback and adjustment of plans and actions accordingly, the Task Force rolled out its initial presentations, knowing that change was inevitable.

Strategic Pointers: Strategic Information Gathering

Strategic information gathering is predicated upon:
- Becoming aware of relevant information, including:
  o The issue itself.
  o The experiences of those bringing attention to the issue.
  o Resources and strategies for addressing this issue.
  o Departmental dynamics and conditions.
  o The approach to DEI beyond the department (college, university, and discipline).
  o Employing effective information-gathering strategies:
    o Look at a variety of options to get an idea of the full scope of possibilities.
    o Take time and money considerations into account realistically.
    o Make optimal use of existing information, local expertise, and productive discussions.
    o Use initial information gathering to direct additional information needs and to explore ways to expand information gathering.
    o Consider using a "Cause and Effect", "Fishbone" or "Ishikawa" diagram to make sure you are addressing the root cause of the issue at hand and not just one of the symptoms. Example at: http://asq.org/learn-about-quality/cause-analysis-tools/overview/fishbone.html

Other key pointers:
- Recognize that team dynamics, as a microcosm of the department, provide information about departmental dynamics.
- Action coupled with reflection leads to more, and better, questions.
- Listen to voices outside your usual circle (e.g., students or people outside of your ME department).
- Become aware of the impulse to dismiss others' experiences.

About the Force Field Analysis[1]

A "force field" is basically the various forces or factors involved in a social situation at any single point in time. A "force field analysis" maps those factors, arrayed in terms of those supporting (or likely to support) the change effort and those factors resisting (or likely to resist) the effort. These factors are alternatively described as "resources" and "barriers."

Some general questions to be considered when reflecting upon forces related to DEI change agendas include:

Among **individuals**:
- What might people's unconscious prejudices be?
- What do individuals feel vs. think about the specific project?
- What wisdom or skills do individuals have? What passions or values exist for DEI?
- What fears or concerns are present?
- What major differences may exist in the views of women and men or white people and people of color on this matter?
- What about staff and/or students – how might they view matters differently from the faculty?

In the **leadership team**:
- What skills and perspectives relevant to the project does the leadership team itself have?
- What skills and perspectives is the leadership team lacking?
- Do they have credibility and trust with departmental colleagues?
- Do and will the team members work well together?

About the **department**:
- What are the core values and norms (accepted ways of interacting with one another) in this department?
- How might these norms affect colleagues' views of the change effort?
- What skills do colleagues have in this area?
- How strongly does the department feel about DEI initiatives?
- Is there room in the engineering curriculum for this sort of instruction?
- Are there major sub-units/sectors of the department that might have a different response?
- How are differences or conflict about these matters dealt with or resolved?

Relevance of the **external environment:**
- Are other departments, the college dean, provost, or others in your institutions committed to DEI improvements?
- Where might there be support or opposition to this department's DEI project?
- Are there sources of relevant expertise available elsewhere on campus?

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- Can alumni (women and/or minorities or non-underrepresented allies) play a useful role?
- What resources (money, people, ideas) might be helpful and where can you find them?

When the forces pushing for change and the forces pushing against change are relatively equal in number/strength the situation (the "field") is in relative stasis or temporary equilibrium. To make change, then, requires unbalancing the field. Unbalancing may be done in several different ways:

1. strengthening the power or valence of the resources
2. diminishing the power or valence of the barriers
3. adding new resources not thought of previously
4. eliminating some of the barriers
5. transforming or "flipping" a barrier into a resource

BUT it is not effective, and it can even be dangerous, to begin to consider altering the field of forces before good intelligence and reflection has brought a thorough understanding of the current equilibrium! We cannot rush to strategizing and taking action until we are sure we understand the "field".

However, as conditions in the department change, or as team members bring about change on some forces in the diagram, the balance of forces is altered and some change occurs. For instance, when key faculty who have been on sabbatical or are otherwise absent return, those negative forces reflecting their absence disappear. Likewise, if a supportive departmental chair is replaced, that positive resource may no longer be available (at least for a while). The development of the force field is an *ongoing and iterative process*.

Case Study 3

Navigating Conflict while Engaging in DEI Change Efforts

Diversity exists through the experience of difference – and difference brings conflict. Conflict per se simply describes the experience of our differences in relation to each other; it is not automatically negative. However, conflict is typically considered problematic based on life experiences in which our differences were not resolved or addressed in a productive manner – thus resulting in loss or in the escalation of tension.

This case study demonstrates the Thomas Kilmann Conflict Mode Instrument. This tool describes five ways people deal with conflict:
- Avoidance: Making no attempt to resolve the conflict
- Accommodation: Allowing the other party to have their way
- Competition: Pushing for one's way with no interest in the other party getting what they want
- Compromise: Both sides *sacrificing* some of what they want to *get* some of what they want
- Collaboration: Both parties working together to find a solution which will meet everyone's needs

Each of these modes works very well in some circumstances and not so well in others. Misapplication of these modes, overreliance on any one mode, or the use of different styles by different parties can lead to problems such as stagnation, open hostility, and failure to resolve or gain from the differences in our needs, experiences, and identities.

Throughout this case study we have entered (in caps) times and places where these modes of conflict behavior are operative. In addition, we have entered a "+" or a "-" after each behavior indicator in order to express our view of whether the behavior in question was an effective or ineffective use of the conflict mode--and, correspondingly, whether it would play a positive (+) or negative (-) role in the overall team and departmental effort to create a more positive departmental climate.

Through this case study, which demonstrates faculty working through many types of conflict situations, you will see:
- examples of the use of all 5 modes from Thomas Kilmann Conflict Mode Instrument.
- distinctions between productive and unproductive conflict behaviors.

The Case Study

The ME Department at ABC University recently went through an external review. The department received excellent reviews on its undergraduate curriculum as well as its research accomplishments and plans. However, the reviewers raised serious concern about the department's social climate around race and gender relationships. Several female faculty members felt their voices were not respected in departmental meetings. Additionally, a number of underrepresented minority graduate students, some of whom were women, reported experiencing disrespect from both senior male faculty and male (primarily white and international) graduate students.

The department chair and the executive committee expressed deep concern about these matters. When the call for TECAID proposals came across their desk, department leaders called for volunteers from the faculty to form a team to figure out what to do about these concerns. Their proposal was accepted and the team began preparations for their first TECAID workshop.

At the TECAID workshop, the ABC University team talked about ideas they had for change and the challenges they anticipated. In particular, they tried to focus on ways they could make the topic of DEI palatable to their faculty. The team noted that there was enough conflict in the faculty already and they didn't want to risk adding to it. (AVOIDANCE-)

At the team's first post-workshop meeting back on campus, one team member raised the question of how the concepts of stereotype threat and implicit bias might be playing out with the faculty in the department. One of the senior male colleagues commented that he wasn't sure about those terms, noting that this was all "soft social science-y stuff, not rigorous experimentation." (COMPETITION-) Other team members nodded in agreement, as this was an accepted point of view in the department. (ACCOMMODATION-)

However, as the discussion progressed, most team members reflected seriously on the important ways these dynamics explained some of the external review committee's findings. Team members were able to draw on their own individual experiences to help make sense out of these concepts and apply them in tangible ways to their department. (COLLABORATION+)

After several meetings, and having read more relevant social science studies (in conjunction with a careful look at the external review), the team decided to make a presentation at a faculty meeting. The findings of the external review were well known to the faculty by then, but the team wanted to share what they had learned about the roots of these phenomena and planned to urge their colleagues to set aside time (perhaps several staff meetings, perhaps a half-day retreat) to seriously discuss solutions. Several colleagues expressed interest in this approach and began to ask questions and offer ideas. (COLLABORATION+)

Before this discussion went very far, though, two senior faculty took the conversation in a different direction (stopping further consideration of this solution) by rather typically

raising other issues, such as the training and competency of the graduate students, the need for junior faculty to focus on their research, and the like. (COMPETITION-)

After some back and forth, the team backed off the retreat idea and advocated for one faculty meeting to be spent on these issues. As one team member said, "We'll try to push on this a bit, but not too much". Most team members felt this was a good middle ground (COMPROMISE+), but some were left with the uncomfortable feeling that they might have given up too much just to bring those two senior faculty into reluctant agreement. (COMPROMISE-)

The team also decided to present what they were learning to a meeting of the graduate students. Unlike the faculty meeting, the presentation to students stayed on track, the students seemed interested and concerned with what they heard, and the possibility of spending some serious time on these issues appeared to be at hand. However, when the students turned in their responses to the session, the team saw that two students wrote very negative feedback, dismissing these ideas as inconsequential. The team spent quite a lot of time talking about these comments – to the neglect of the many other perspectives that were offered in the written feedback. (ACCOMMODATION-)

Meanwhile, one team member spoke privately with a colleague not on the team and became enmeshed in a conversation wherein the colleague nitpicked the team's efforts and suggested a variety of competing solutions (a written mandate about expected faculty and student behavior, naming and dealing with prime offenders). (COMPETITION-)

At their next team gathering, team members discussed their reactions to the feedback they'd received at the faculty meeting, the meeting with graduate students, and through the various informal conversations team members had with other colleagues. Overall they felt somewhat discouraged. The challenges and fallout seemed insurmountable; all the comments, conversations, ideas, and opinions were clouding up – diffusing, and complicating their ideas about what was needed. They talked for a long time but got no sense of traction – feeling instead like they were constantly defending their efforts or trying to please everyone. (COLLABORATION-)

During their next meeting, the team focused on what this array of reactions meant for their next steps. Opinions varied: Should the team push for a real faculty retreat? Settle for a briefer faculty meeting? Go back to the graduate students? Collect more data? As one team member said, "Oh! We're not as unified as we thought!"

What followed was a series of serious, quite open, and thoughtful discussions. Themes included: the different perspectives within the team itself, what they revealed about departmental dynamics, and how they might make use of this new combined perspective. Out of these discussions came a new idea, which everyone liked, for an approach to the topic during an upcoming faculty meeting. Overall, the team was pleased with the way they were working together. (COLLABORATION+)

At that next faculty meeting, which had been set aside for a discussion of the departmental climate and how to improve it, comments by several male faculty revealed

the extent to which some faculty members didn't really understand the situation: they either didn't believe that the women faculty and URM students experienced much (or any) exclusion, or that if they did experience exclusion, the women and URM students would have to just "get over it." (COMPETITION-)

Later, several of the women faculty wrote emails to the team expressing their distress about some of the things they heard during the meeting, (COMPETITION+) and raised the question of whether such discussions might not just be making matters worse. Some wondered if these efforts should cease until everyone "cooled down a bit." (AVOIDANCE+)

Consequently, the team planned to work a bit differently at the next faculty meeting. They decided to engage their colleagues in a Social Identity exercise they had participated in at a TECAID workshop. They felt that in so doing, everyone at the faculty meeting could engage at their own level in discussing the ways their race, gender and faculty rank affected how they taught classes, if they felt a sense of belonging in the department, if and how they had experienced discrimination/exclusion or unfair/uncomfortable treatment, and so on.

Of course, as the team undertook this, they encountered resistance again. But this time, the resistance occurred in the context of issues of differences that were acknowledged. The team also took the opportunity to respond to the resistance more vigorously and positively, taking what they learned from their TECAID experience as a reminder that open discussion of differences (including overt resistance) can help improve the level of honesty in an exchange. (COMPETITION+) It also became clear that some faculty were pushing back in an attempt to *improve* the process of working on the departmental climate, rather than trying to sabotage the work. Afterwards, several department members told the team that they wanted to help with this effort. And thus the project was gaining allies. (COLLABORATION+)

Leaders of the team who were familiar with the Thomas Kilmann Conflict Mode Instrument recognized that the project team and the broader community could continue to ebb and flow between productive and unproductive behaviors – or that the team could actively steer the process in a way that emphasized positive means of conflict management. They determined that the best way to handle this would involve inviting a DEI organizational change expert into the process to provide assistance.

They reviewed local expertise (e.g., colleagues in organizational change within the university's education or social science departments; Diversity Office personnel; counseling faculty; and NSF ADVANCE grant colleagues). One of the expert colleagues identified was interested in the project, but due to faculty workload, could only spend 5-10 hours on it during the current semester. So to supplement the internal help, the team also opted to hire an external organizational consultant recommended by colleagues engaged in DEI change at another institution.

The addition of both the internal and external change consultants helped the team build a productive space to talk about conflict. The experts also helped team members build individual skills to recognize and effectively address unproductive conflict when it

emerged in community conversations. As a consequence, the team was able to develop and effect positive department change – as evidenced by feedback from female faculty members and URM graduate students. As a function of the success of this project, the faculty DEI change team and department, now sensitized to the importance of DEI issues, are actively pursuing solutions for another DEI climate-change concern.

Strategic Pointers: Navigating Conflict

As noted in the introduction, the Thomas Kilmann Conflict Mode Instrument describes five basic ways people generally deal with conflict: avoidance, accommodation, competition, collaboration, and compromise. All five modes are valid and useful – and have their place in dealing well with conflict. However, all five can also be misused.

To gain the benefits of conflict, it is important to choose well the mode of engaging it. Unproductive choices can harden or bury conflict; while well-chosen modes can uncover root causes, enhance relationships, and create win-win situations.

Examples of productive and unproductive use of the modes from this case study include:
- avoidance
  - unproductive use: attempting to sidestep all conflict in the department
  - productive use: waiting until things "cooled down" a bit before re-engaging the conflict
- accommodation
  - unproductive use: going along with an accepted point of view just to keep the peace
  - productive use: requesting and acting on feedback from students, staff, or colleagues
- compromise
  - unproductive use: giving up too much for a gain which may not be worthwhile
  - productive use: finding an acceptable middle ground so the project can move forward
- competition
  - unproductive use: asserting that people should "just get over" their experiences of exclusion
  - productive use: describing one's own point of view or experience even in the face of intimidation
- collaboration
  - unproductive use: devoting too much time to collaborating over nitpicky issues
  - productive use: looking at the many perspectives to help develop best next steps after the initial faculty meeting

The table below gives an overview of the five modes and how they play out in conflict situations. It also describes some basic parameters for productive and unproductive uses of the modes.

Conflict Mode Use

Mode	If I am using this mode…	Benefits	Productive use or context	Unproductive use or context
Avoidance	● I make no attempt to resolve the conflict.	● Can cool things down.	● Taking time before addressing conflict to gather information. ● Letting emotions cool before addressing the conflict.	● Burying a conflict rather than addressing it. ● Sidestepping a conflict in hopes it will go away.
Accommodation	● I allow the other party to have their way.	● Can preserve relationships.	● Issue is more important to other party than to me.	● Giving in to other party to avoid confrontation, though issue is important to me.
Compromise	● Both sides sacrifice some of what they want to get some of what they want.	● Can be faster than collaboration.	● Issue not highly important to either party. ● A relatively quick resolution is needed.	● Issue is very important to one or both parties.
Competition	● I push for my way with no interest in the other party getting what they want.	● Can clarify important issues.	● Issue is much more important to me than to other party.	● Issue not very important to me, but I hate to "lose."
Collaboration	● Both parties work together, find solutions to meet everyone's needs.	● Can create unanticipated solutions.	● Issue is very important to both.	● Issue is not very important to one or both parties. ● A decision must be made quickly.