International Journal *of* Designs for Learning
2024 | Volume 15, Issue 2 | Pages 14-25

SETTING A BETTER DEFAULT: DESIGNING A WELCOME ACADEMY FOR NEW FACULTY CENTERED ON INCLUSIVE TEACHING IN ENGINEERING

Katherine Goodman, Heather Lynn Johnson, Maryam Darbeheshti, Tom Altman, David C. Mays
University of Colorado Denver

This design case describes a Welcome Academy for New Faculty in Engineering. To situate the design, this work is motivated by the documented need to make STEM education more inclusive. This need has prompted extensive research on best practices for inclusive teaching, but less is known about how to translate that research into actual teaching practice. This design case addresses that difficulty. Influenced by Thaler and Sunstein's theory of nudging, the Welcome Academy resets the default to expect inclusive teaching. To develop the design, we organized an off-campus summit to solicit input from current engineering faculty on the question, "What do new engineering faculty need to know about diversity, equity, and inclusion (DEI)?" That input guided the creation of a four-hour workshop, delivered the morning after campus-wide new faculty orientation, that included an icebreaker, basic campus demographics, curated DEI-related resources, a campus tour emphasizing historical power dynamics, and presentations by current engineering students. To depict the experience of the design, we describe the final implementation, which varied from the design at points, and the unanimously positive feedback from new faculty. That feedback, however, was not the result of a flawless implementation: We also describe a number of failures that will improve subsequent iterations of the Welcome Academy, emphasizing the importance of communication, respect, and flexibility.

Katherine Goodman is an associate teaching professor at the University of Colorado Denver in the College of Engineering, Design, and Computing. She also serves as the University's Director of the Center for Excellence in Teaching and Learning. Her research focuses on transformative experiences in engineering education.

Heather Lynn Johnson is a professor at the University of Colorado Denver in the School of Education and Human Development. She is a mathematics educator who investigates students' math reasoning. She designs tasks to help students expand their math reasoning, and she studies how instructors and departments transform practices to grow students' math reasoning.

Maryam Darbeheshti is an associate teaching professor of Mechanical Engineering at the University of Colorado Denver. She is the PI of a recent NSF award that focuses on STEM identity at Urban Universities.

Tom Altman is a professor of Computer Science and Engineering at the University of Colorado Denver. He specializes in optimization algorithms, formal language theory, and complex systems. He has published a book and 90+ journal/refereed papers and has been a PI/co-PI on over 20 grants, including the NSF(4) and DARPA(2). An ABET Program Evaluator, he has recently expanded his research interests into STEM/Engineering Education.

David C. Mays is an associate professor at the University of Colorado Denver, where he teaches fluid mechanics, pipe network and sewer design, and hydrology. He leads the graduate track in Hydrologic, Environmental, and Sustainability Engineering (HESE), leads the NSF-sponsored faculty learning community Engineering is Not Neutral: Transforming Instruction through Collaboration and Engagement (ENNTICE), and co-leads the NSF-sponsored certificate program Environmental Stewardship of Indigenous Lands (ESIL).

INTRODUCTION

One challenge for new faculty entering any university is adjusting to the new environment. They must learn university policies, college and department level politics, and more. Although we may not often call it such, this is a learning experience, one that can set the tone for faculty behavior and attitudes toward their new colleagues and their new students. Orientation sessions for new faculty are meant to cover important aspects of being employed by that particular entity, logistics such as how the pay system works or how

https://doi.org/10.14434/ijdl.v15i2.36438

to access benefits, and how to draw on resources that support their work, which might include learning about centers for faculty development, or assistance in grant writing and recruiting graduate students. Less focus is placed on helping new faculty adjust to the student body they will be teaching, and how to adjust their pedagogy to suit their new students. Our design process began with the question, "What do new engineering faculty need to know about diversity, equity, and inclusion (DEI)?"

CONTEXT

In 2021, the University created a strategic plan with five goals, with a top goal to "become the first equity-serving institution" (University of Colorado Denver, n.d.-b). The University is an urban research university and has a student population that skews older (mean age of undergraduates 26), with roughly half of the undergraduate students being first generation and about half being people of color (University of Colorado Denver, n.d.-a). Concerted efforts across the university are underway to reshape services and learning experiences to better meet the needs of students. In parallel with this university effort, the engineering college at the University has been working to transform itself. One outward signal of these changes is the name change from the College of Engineering and Applied Sciences to the College of Engineering, Design and Computing (CEDC) in 2019. The name change represents ongoing efforts to incorporate more design and computing experiences across the curriculum, which are resulting in clusters of changes in multiple courses. Part of the impetus for these changes is broad: all students need to experience design processes beyond one or two design-focused courses and to utilize computing power in more tasks, to be prepared for the adaptive and entrepreneurial engineering workplace anticipated in the coming decades. Another, equally important, motivation for these changes was to better support women and minoritized students in engineering disciplines. Engineering courses that emphasize design thinking in project-based work, particularly using human-centered design principles, have been shown to increase persistence in engineering disciplines among those demographics (e.g., Castaneda et al., 2022; Howland Cummings et al., 2021). Various projects have been initiated to enhance these curricular changes.

One such project is Engineering is Not Neutral: Transforming Instruction via Collaboration and Engagement (ENNTICE). A central feature of this project is a Faculty Learning Community (FLC); a group of instructors from all five departments of CEDC who come together once a month, exclusive of summer, to discuss how issues of diversity, equity, and inclusion (DEI) influence their teaching, and how to make their teaching practices more inclusive. The goal of ENNTICE is to nudge engineering faculty to adopt known best practices for inclusive teaching; this effort is part of a larger movement to shift the culture of CEDC to be more welcoming and supportive for all students, particularly those groups who have been historically excluded (Collopy et al., 2022; Goodman et al., 2023)

The leadership team of the ENNTICE project includes four engineering faculty representing civil engineering, computer science, mechanical engineering, and general engineering. In addition, the leadership team includes one colleague from the School of Education and Human Development. These five faculty, who are also the authors of the current report, are unified by a desire to implement best practices for inclusive teaching. This unity of purpose prompted their collaboration to brainstorm ideas, outline ENNTICE, and seek funding through the U.S. National Science Foundation's program Broadening Participation in Engineering. As part of that proposal, the leadership team outlined a Welcome Academy for New Faculty, a half-day live workshop presented by the leadership team to all new engineering faculty. The goal of this workshop was not (and is not) to compress a three-year FLC into a four-hour seminar. Rather, following the concept of nudging (Thaler & Sunstein, 2008), the goal is to emphasize the importance and opportunity of DEI, marshal curated resources, and connect new faculty to a network of support.

INFLUENCES

The five designers of this learning experience shared many influences, a natural development as collaborators in the larger ENNTICE project. The first influence is that four are faculty of the same engineering college. Some other influences include the Equity Toolkit, a freely available set of materials organized by the Colorado Department of Higher Education (Allen et al., 2019). These resources are organized into three clusters (a) to encourage self-inquiry, (b) to support course design for culturally responsive teaching, and (c) to create community in particular classroom environments. The Equity Toolkit also provides the structure for the first three years of the FLC. As part of that work, the design team embraced the design of choice architecture and nudging as crucial to shifting the culture and practices of the engineering faculty (Thaler & Sunstein, 2008). A *nudge* is defined as a design element intended to increase the likelihood of a particular choice by the user, without eliminating other options. The design of these nudges is often part of an overall *choice architecture*. That is, what options are available, and of those options, which are the simplest to select? Thaler and Sunstein note that often the easiest moment to nudge is when the user is entering a new situation. Hence, orientation is perhaps the best time to set expectations for inclusive teaching practices and nudge new faculty toward teaching in a particular way.

In concert with nudging, the designers considered automatic choices or "fast thinking," in contrast to what requires more analysis or "slow thinking," the central idea in Kahneman's

Thinking Fast and Slow (2013). Knowing the complex demands of faculty work, the designers look to this research to understand how to create structures for good "fast thinking" choices that would result in inclusive teaching practices and thus better outcomes for students.

Other research that has influenced our design work include the Teaching to Increase Diversity and Equity in STEM (TIDES) program (Mack et al., 2019), *A Whole New Engineer*, wherein Goldberg and Somerville note that all relevant change variables relate to emotions (2014), and the design principles and mindsets as laid out in *The Design Innovation Methodology Handbook* (Lauff et al., 2021).

Personal experiences informing this design include long-time faculty advising of student groups and extensive teaching experience by all five designers. Also, two of the designers are foreign-born Americans and reflect on lived experience to understand both students as well as the new faculty this design was created for. As it happens, all the new faculty participating in the Welcome Academy in this case were foreign-born, so this was an especially salient connection.

From both the research-based and personal influences, we believe that many positive changes can be made in a faculty's culture by "setting the default" to those practices that support inclusion and equity. Indeed, this is the fundamental premise of the work presented here: New faculty do not resist inclusive pedagogy, because, to them, it is not reform (Nahapetian et al., 2019).

DESIGN NARRATIVE

While many university programs are simply developed and delivered from a set of learning objectives, the ENNTICE leadership team decided to use the practices we were championing in the FLC meetings and engage the FLC in developing the Welcome Academy for New Faculty. In other words, we sought to utilize the principles of active learning and inclusive teaching, the ones we seek to spread through the FLC, in the process of designing the Welcome Academy. The leadership team had already planned an off-site meeting to mark the end of the first year, and gathering input for the Welcome Academy gave this off-site a more specific aim. As it was developed, the off-site meeting gained the name Summit, since it was noted that the intent was not to "retreat" from our regular work, but to move forward in applying it. Hence "summit" was more appropriate.

The Summit: Planning for the Welcome Academy

The Summit had many features that were intended to reflect the intent of ENNTICE to promote DEI best practices in teaching. We did this by utilizing the techniques we espoused in the regular monthly FLC meeting, namely including multiple perspectives and seeking feedback from stakeholders. The team began planning the Summit in February 2022 at the team's regular planning meetings. Initial brainstorming resulted in a plan for holding the Summit at an off-campus location, incorporating some light physical activity, having a meal together, inviting speakers to share at the event, and including interactive experiences for faculty. All these elements came from the leadership team reflecting on their observations of successful and congenial professional development experiences. During the months that followed, the team organized logistics around the event. We decided to include industry and student speakers to make room for diverse viewpoints. The industry speakers were college alumna, and the student speakers had each taken a course with at least one member of the leadership team. Furthermore, we invited students and speakers from marginalized groups, so that faculty would learn from their experiences.

The day-long Summit was held at a state park. Several elements–a new outdoor location, a meal, and guest speakers–were all intended to stimulate the FLC to think in new ways and spark creative ideas. The morning presentation was held at a small outdoor amphitheater. Two industry speakers, Ms. Saman Mehdi and Ms. Erika Vega-Bazan, both of Atkins

FIGURE 1. Ms. Saman Mehdi and Ms. Erika Vega-Bazan share perspective from industry, as engineering alumna during the Summit, held at a local state park.

Global, presented on listening, communication, and intercultural skills engineers need in a diverse industry (see Figure 1). They shared stories about both challenges and triumphs in their work as civil engineers and reflected both on their time as students and their experiences in the workplace.

After the industry speakers, the faculty returned to a picnic pavilion and brainstormed learning objectives for the Welcome Academy. The brainstorming session was organized as a Jigsaw activity (Brown, 1992) as follows. To steer the conversation, we split the faculty into pairs and asked each pair to discuss three prompts:

- What do new faculty need to know about diversity, equity, and inclusion (DEI)?
- What do new faculty (perhaps from elite schools) need to know about our students?
- What specific tools/policies supporting DEI do new faculty need to know about?

Pairs spent 15 minutes generating responses to each prompt (around three responses). Then two pairs joined to form a quartet, for another 15 minutes of discussion. Each quartet was to refine and fuse ideas from each pair. Ideally, there would be one response from each pair, as well as a response that fused ideas from the pairs. Faculty then were to write ideas on post-it notes, displayed on flip charts throughout

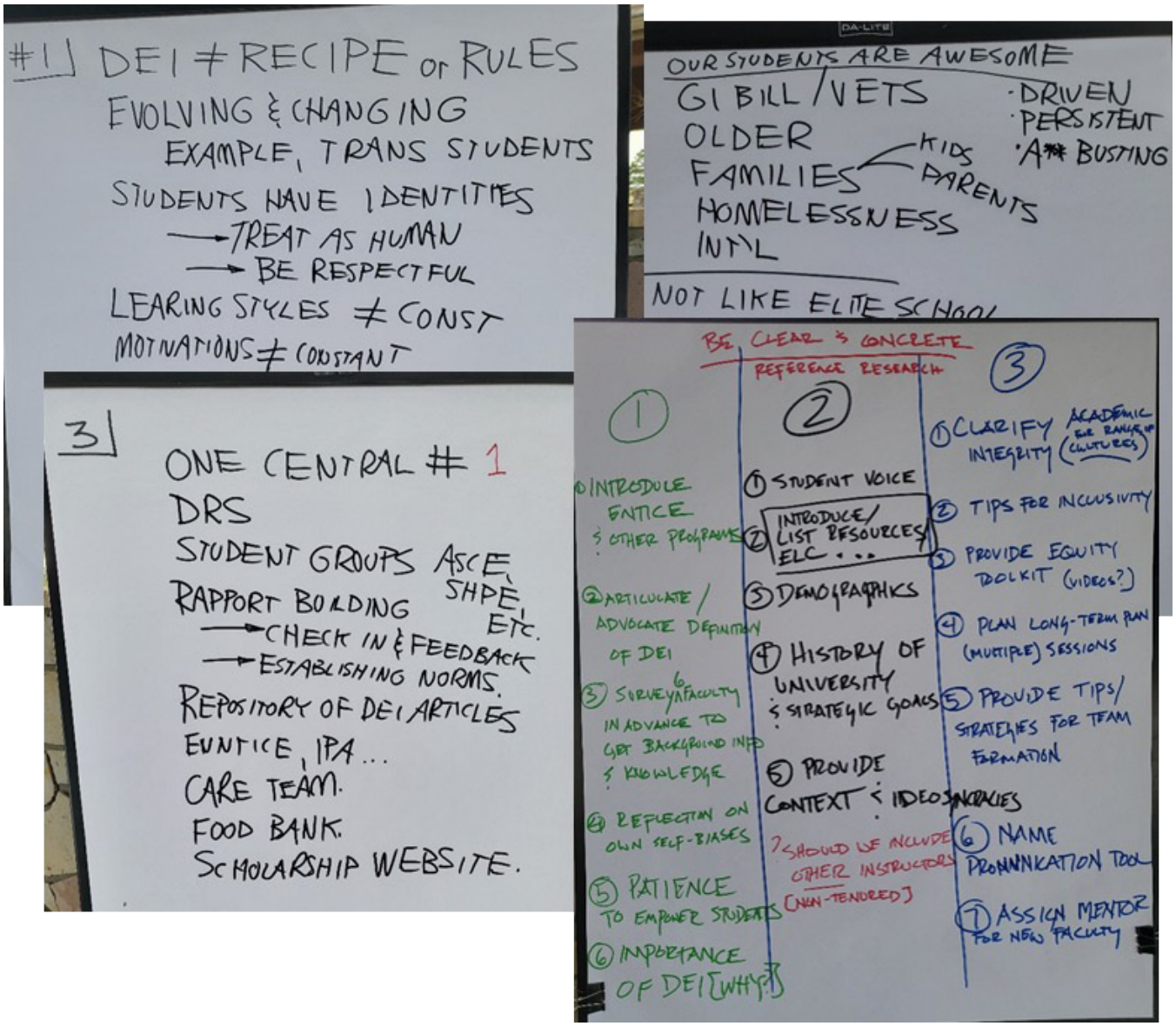

FIGURE 2. Output on Flip charts from Summit afternoon brainstorming sessions. The upper left, a sample of responses to "What do new faculty need to know about diversity, equity, and inclusion (DEI)?". The upper right, responses to "What do new faculty (perhaps from elite schools) need to know about our students?". The lower left shows responses to "What specific tools/policies supporting DEI do new faculty need to know about?". The lower right shows the collective ideas that formed the first draft of the Welcome Academy agenda.

the pavilion (see Figure 2). After this, the quartets shared what they viewed to be the best ideas from the group. The group then broke for lunch catered by an American Indian eatery.

After lunch, two current CU Denver student speakers presented: Ms. Wendy Schadler (Bioengineering) and Ms. Ritzwi Chapagain (Civil Engineering). They shared examples, stories, or initiatives that foster an inclusive environment for engineering students. They took questions from the faculty and shared what they thought was most crucial for new faculty to know. During the afternoon session, the goal was for faculty to develop lesson plans for the Welcome Academy based on the learning objectives. First, faculty conducted a gallery walk, to review the ideas displayed on the flip charts (see Figure 2). To guide this session, the team gave three prompts:

- How can we leverage our campus location for our Welcome Academy?
- Whose voices should be featured and how might we include them?
- How can we teach this actively? (i.e., "active learning")

The faculty then formed new pairs. Each pair selected a learning objective that they wanted to address at the Welcome Academy, and then completed an informal lesson plan template. On the template, faculty identified a learning objective, described an activity that could facilitate progress toward the learning objective, and identified follow-up actions to continue progress toward the learning objective. Then, pairs formed quartets and shared out their ideas with the whole group. These notes formed the initial design of the Welcome Academy for New Faculty (see Figure 2, lower right).

From Summit to Welcome Academy

Using the materials created at the Summit, the leadership team proceeded to meet to create an outline of the Welcome Academy. These meetings included dividing the Welcome Academy into sections and assigning each member of the leadership team a section to develop and organize. One principle that has emerged from all the FLC work is to not make assumptions about people's prior experiences with a particular topic, in this case, DEI issues. This is both a practice of inclusive teaching and an insight from the personal experience of the designers. Therefore, a survey was developed to start the Welcome Academy, and the remaining segments were developed with flexibility so that the discussions could be adapted to the responses received. Other ideas that became guiding design principles that came out of the Summit:

"Our Students are Awesome" - thinking about who our students are, and what they have experienced, is key to teaching them well.

"History Matters"—the history of our campus is still influencing us today.

"Inclusive Teaching = Good Teaching"—make this the default by modeling inclusive teaching in how we deliver the Welcome Academy, and providing resources to aid them in the future.

THE DESIGN OF THE WELCOME ACADEMY FOR NEW FACULTY

The Welcome Academy for New Faculty was a four-hour experience, held one morning as part of multiple activities orienting new faculty from many disciplines to the campus. The Welcome Academy was intended to fit with these other activities, and it was constrained by the overall schedule of events, including a lunch that began immediately after our activities ended.

The venue was a ground-floor conference room, often used by city and university leaders when collaborating. The room itself has glass walls on three sides, two of which face external sidewalks, giving it a feeling of being embedded in the activity of the city more than that of campus. The fourth wall

SEGMENT	PLANNED SCHEDULE	ACTUAL SCHEDULE
Welcome and Overview	8:00-8:30 am	8:15-8:40 am
Identity and Inclusion	8:30-9:00 am	8:40-9:10 am
Break	9:00-9:10 am	9:10-9:15 am
Who Are We?	9:10-9:35 am	9:15-9:40 am
Resources	9:35-10:00 am	9:40-10:05 am
Campus Tour	10:00-11:00 am	10:05-11:30 am
Student Voices	11:00-11:30 am	11:30-11:50 am
Commitment	11:30-11:40 am	Removed
Evaluation	11:40-11:55 am	11:50-12:00 pm
Sendoff and Celebration	11:55- 12:00 pm	12:00-12:05 pm

TABLE 1. The Agenda for the Welcome Academy for New Faculty with our planned and actual schedules.

has a large digital display for presentations. The room was set up with a central table, enough to seat 12 people. We chose this venue partially to emphasize the university's connection to the city, and also to show new faculty a different building than they would normally see—their offices and typical classrooms are in other buildings.

The participants fell into three groups: the designers, who are the leadership team of ENNTICE (with one person absent due to illness), representatives of the Dean's office, and the new faculty. There were five new faculty, all hired at the rank of Assistant Professor. Three professors were from the Department of Civil Engineering, and two were from the Department of Mechanical Engineering; four had tenure-track appointments and one had a non-tenure-track appointment on the Clinical Teaching Track.

We created the agenda for the morning to model active learning methods, including breaks to provide time for conversation and movement, and allowing for flexibility in the planned schedule. Table 1 includes columns to show our planned and actual schedules. Next, we describe the design as well as adjustments made during implementation.

Welcome and Overview

Before the official start of the Welcome Academy, new faculty had breakfast and the dean's welcome, in the same room. The first agenda item, Welcome and Overview, comprised a brief land acknowledgment for the Arapaho, Cheyenne, and Ute, followed by an icebreaker activity, a statement of the morning's objectives, and an overview of the agenda. The icebreaker asked each participant to state their name, the department they joined, where they earned their terminal degree, and—most engagingly—to share one hidden expertise. Overall, the opening was chosen to acknowledge the historical context of the campus, a theme that would return with the campus tour, and the icebreaker was intended to invite the new faculty to engage both as professionals and humans with outside interests. This idea of acknowledging who people are outside of their professional identities is also part of the inclusive teaching practices being promoted by ENNTICE. The first agenda item ended with a description of ENNTICE with an invitation for new faculty to join.

Implementation note: The Welcome Academy was scheduled after breakfast with the dean's opening remarks at 7:30 am, which we hoped would ensure an on-time start. However, one new faculty member did not arrive until more than an hour into the Welcome Academy, with no warning about his delay. Organizers puzzled over whether the more inclusive course of action was to wait for his arrival or to be respectful of everyone else's time by beginning. As a result, the beginning was delayed by roughly 15 minutes.

The icebreaker resulted in a 1-2 minute response from each participant, sharing hidden expertise including language, cooking, and martial arts. This achieved the desired effect of centering the academy on the particular people participating. We also note that the invitation to the FLC was effective: one of the five new faculty accepted the invitation to join the FLC and has been participating in every monthly workshop since.

Identity and Inclusion

The second segment, Identity and Inclusion called attention to the fundamental role of student identity for those aiming to foster inclusive engineering education. Based on the inclusive principle of acknowledging what people already know, this segment began with a survey to gauge the new professors' prior knowledge of DEI practices. This baseline was established using a short online survey, with responses appearing in real-time on the room's display. The responses were used to start a brief group discussion that allowed the organizers to define the key terms diversity, equity, and inclusion in collaboration with the new faculty (see Table 2). This process of co-creation was designed to foster feelings of inclusion by the new faculty, and that, in itself, was designed to model effective teaching practices. The full list of survey questions is below.

- What are you most excited about doing at CU Denver? (open response).
- What words come to mind when you think about the students you will teach at DU Denver? (three words).
- DEI & Teaching—rate the following on a 5 pt scale from Strongly Disagree to Strong Agree:
    - I have had formal teaching training on DEI issues.
    - I have reflected on how DEI will impact my teaching.
    - My experiences as a student connect to DEI issues.
    - I am still learning how to adjust my teaching in response to DEI issues.
- What would you like us to know about your experiences with DEI? (open response).

In addition to learning a bit about what the new faculty have already done related to DEI, we also designed this to create an automatic association between teaching and DEI practices.

The major component of Identity and Inclusion was a think-pair-share exercise prompted by a three-slide presentation. The goals of this think-pair-share exercise were two-fold. First, the exercise introduces the inclusive teaching practice of think-pair-share itself, based on the premise that many engineering faculty have little-to-no formal education in pedagogy of any kind, and perhaps even less in inclusive pedagogy. Second, the exercise prompts new faculty to reflect on identity and inclusion by asking two questions:

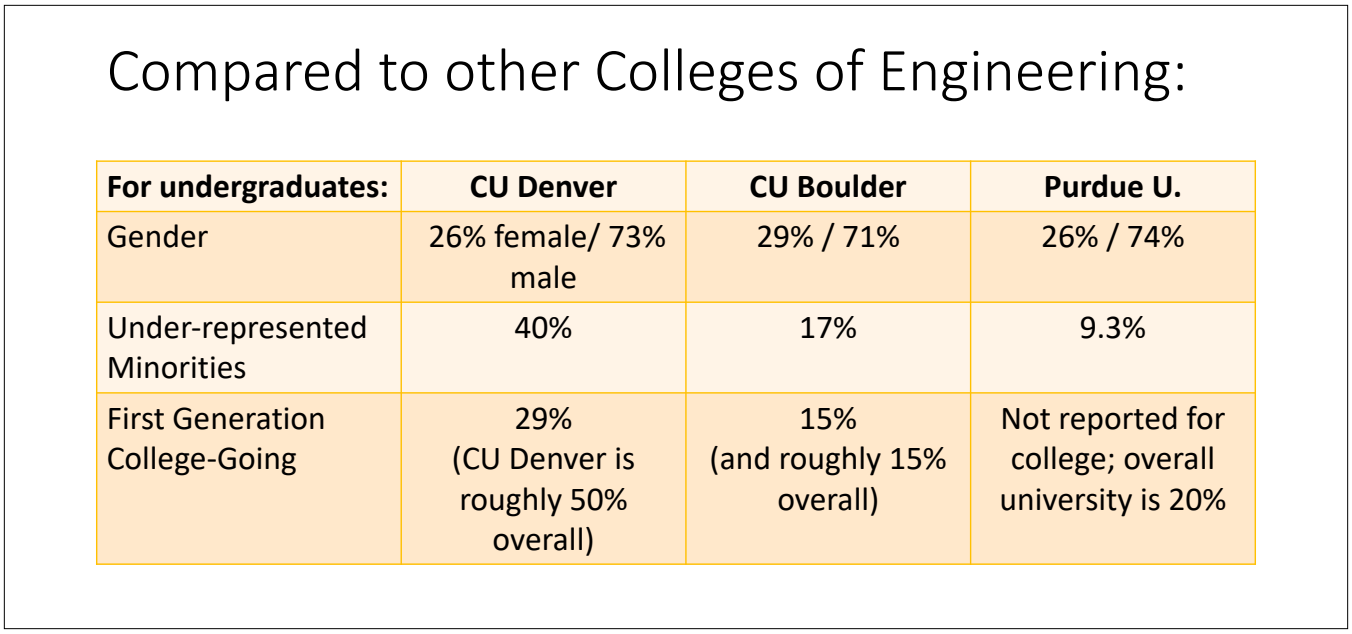

FIGURE 3. Slide illustrating key differences between the College's demographics and other engineering colleges, with an aim of helping new faculty understand the students they will be teaching.

- Who is a student you connect with? What are the characteristics and attributes of that student?
- Who is a student you DO NOT connect with? What are the characteristics and attributes of that student?

The organizers aimed to pair themselves with the new faculty to facilitate getting to know them and to guide the conversation to explore mistaken assumptions faculty often make about student behavior. For example, is the student sitting in the back who always leaves five minutes early disinterested or trying to be polite and not disrupt class when they must leave to arrive for work on time? During the share component of the think-pair-share exercise, each pair of organizers/new faculty then reported complementary observations. A brief break is scheduled after this to facilitate spill-over informal conversation.

Implementation note: The survey revealed that these faculty had little formal DEI training but were eager to engage with the ideas. The think-pair-share activity generated several spontaneous insights. For example, one organizer and one new professor responded to these questions as follows. The organizer connected with students who attend office hours regularly, but not with students who join remote classes on Zoom with their cameras off; the new professor connected with hardworking students—especially those demonstrating research interest—but not with those who are absent from class and unresponsive to email follow-up. As a side note, these responses indicate that the new professor arrived at the college with at least some responsible teaching experience, and also had some experience with engaging—or attempting to engage—students who were absent from class.

DIVERSITY	People have many dimensions. Difference matters.
EQUITY	Meeting people where they are. How? Get to know them!
INCLUSION	Atmosphere, culture, and tone of acceptance.

TABLE 2. Definition of key terms.

The atmosphere in the room during the sharing exercise was positive, lively, and consensus-building; the organizers had to deliberately halt the conversation to officially start the short break.

Who Are We?

After the break, the organizers transitioned to the fourth segment, Who Are We? This segment provided the new faculty a sense of who they would be teaching, by sharing the demographics of the University student body, and the engineering college specifically (see Figure 3). A six-slide presentation leads to the question: How do these facts impact how we teach? This is designed to create the new default that you would not plan a course without thinking about who your students are first.

This brief presentation provided a segue into an introduction to the concept of implicit bias, and to further define the key terms diversity, equity, and inclusion (see Table 2). Compared to the previous two segments, this segment was less interactive, which is why it was brief, and followed by an activity that was both humorous and specific.

Implementation note: The less interactive nature of this agenda item did not prevent it from appearing prominently in the new professors' evaluation feedback, which specifically mentioned the value of knowing the university's demographics.

Resources

The previous segments were designed to build a sense that the new faculty will need to act, to shift their teaching practices. In effect, the prior segments are setting the stage for the *nudge*, or the automatic behaviors we hope to encourage, namely utilizing certain resources so that they can be more inclusive and equitable in their teaching practices. The fifth segment, Resources, shares what they will need to make that shift.

To transition to this segment, the organizers presented a humorous video designed to enliven the participants and present a clear example of cultural thin ice. This video, "What kind of Asian are you?" (Tanaka, 2013) displays a scenario in which a white man asks an Asian woman, "Your English is perfect. Where are you from?" to which she replies, "San Diego. We speak English there." The man persists, and the situation becomes increasingly uncomfortable until the tables are turned and the woman poses the same question to the man. The organizers chose this video because it illustrates, quite compellingly, the difference between intent and impact. This video was presented on the agenda under the heading, "Avoid this:"

The next topic, again under Resources, was "Try this:" During the Summit, ENNTICE faculty strongly recommended providing new faculty with a list of campus support resources for students. The organizers were concerned, however, that such a list of resources could easily get lost in the stack of printed materials provided to new faculty between the campus and engineering orientations. Instead, the organizers utilized an inclusive teaching technique called text annotation, which in this case also incorporated the power of storytelling.

A story from Gillian-Daniel et al. (2021) narrates a day in the life of successful and inclusive Professor Smith. The brilliance of this story is that it weaves inclusive teaching, research, and mentoring into the fabric of a professor's daily practice. It presents a counterargument to the tacit assumption that DEI training is a pleasant supplement for those faculty with bigger than average hearts and smaller than average professional productivity; it presents a counterargument to the mistaken notion that DEI training is like pinstripes on a vehicle, which make the vehicle look cooler, but do not change its performance or reliability. This narrative was copied verbatim with one key change: the organizers annotated the story with links to resources for the specific context of our university. For example, where Gillian-Daniel et al. (2021) mention a basic needs statement that highlights mental health resources on campus, food bank information, and financial assistance resources, the annotation points new faculty to Single Stop, the university's portal for those resources. Each of the 12 paragraphs in the daily narrative were numbered. Each new professor was assigned to a specific paragraph 1-5, then asked to spend two minutes reading silently, then to report one standard practice, one inclusive practice, and one resource. This exercise did not cover all 12 paragraphs but provided the handout for new faculty's further review and use. This activity was designed to move DEI best practices from a theoretical framework to a set of practices the new faculty could foresee enacting, and create the association of "Good Teaching = Inclusive Teaching."

Campus Tour

The sixth agenda item, Campus Tour, deviated from the standard protocol for seminars, which are typically confined to a single room. This agenda item also deviated from the standard protocol for campus tours, which typically seek to place the campus in the best possible light. In contrast, this campus tour had a different objective: To place our work at the university in the context of power and privilege. Why? Downtown Denver, home to three institutions (CU Denver, Community College of Denver, and Metropolitan State University of Denver), is on land twice acquired through power and privilege: The first acquisition was unceded land from the Arapaho, Cheyenne, and Ute; this genocide and forced removal was noted when the organizers read the full land acknowledgment statement written by the university's then-director of American Indian Student Services Grace RedShirt Tyon. The second acquisition was through eminent domain when the entire Auraria neighborhood was condemned in the 1970s (Hernandez, 2022; Page & Ross, 2017). In both cases, those with more power and privilege displaced those with less power and privilege. The campus tour, organized by a professor in the Department of History, stopped at several locations where the tour guide, a history graduate student, read verbatim excerpts from memoirs written by former residents of the Auraria neighborhood. The tour includes areas the engineering faculty have little reason to visit, 9th Street Park. This area is still lined with homes, now serving as various staff offices that were preserved by a local historic preservation group when the campus was constructed. The 60-minute tour is intended to reset the mind, and more importantly, put the practice of engineering education into the context of power and privilege. This context is important because engineering itself has often been a tool of power and privilege, not always working for public health, safety, and welfare, but sometimes for the increased wealth and privilege of those in power. By highlighting these dynamics, the tour provides new context, to how "History Matters" on our campus.

Implementation Note: Organizers did not fully account for the walk time from the Welcome Academy venue to the starting point of the tour, and arrived later than scheduled. Nor did

we know that the tour was serving a dual purpose for the tour guides: a practice for upcoming events (the campus celebrated 50 years in 2023) which included a group of 5-10 former residents, each of whom related their personal recollections throughout the tour. The tour stretched from the planned 60 minutes to 90, at which point the organizers determined we needed to politely disengage and return to the original venue for the rest of the Welcome Academy. This was particularly pressing, since the next segment, Student Voices, meant that students were waiting on us. One organizer had indeed departed after 60 minutes to advise the students of the unexpected delay. But even still, the longer-than-expected tour presented a catch-22, weighing respect for displaced Aurarians sharing oral history against respect for students. The walk back from 9th Street Park to the original venue was hurried, and the apologies to the students for having them wait 30 minutes were profuse.

Student Voices

After the walking tour, the whole group returned to the original room. Since the earlier segments were intended to provide a broad context of the student body and history of the campus, this segment, Student Voices, was meant to assist the new faculty with making these ideas more concrete. Specifically, the new faculty needed to hear from current students. In a casual half-hour Q&A, three students shared what they liked most about their courses and activities at the college, as well as a couple of challenges. Then the new faculty had time to ask questions. Organizers did not mediate this but rather moved toward the back to encourage a free-flowing dialogue. The best way to show that "Our Students are Awesome" is to introduce the new faculty to them.

Implementation note: All three students were from an organizer's home Department of Mechanical Engineering, and one student was additionally double majoring in Computer Science; the students comprised two women and one man. They shared their experiences in the Society of Women Engineers (SWE), working on group projects with students from other departments, and doing interdisciplinary prototyping work in a shared maker space. The students also answered a brief round of questions from the new professors.

Commitment

The penultimate segment was to be focused on Commitment. The central desired outcome of the Welcome Academy was for new faculty to change how they think about preparing their courses. The organizers wanted them to have in mind the actual students and context of the college and university, which may be quite different from their experiences. To fortify that new intention, we designed an activity to write a commitment to action. To avoid undue pressure to produce a thoughtful goal in the moment, the organizers planned to share their commitments to support and connect with the new faculty, while the new faculty would be guided through how to write a commitment without having to share it. Although relatively short, this activity was designed to help participants sum up their reactions to the Welcome Academy in a way that makes it more likely that they will remember and follow through on the new ideas they learned.

Implementation note: This segment was completely omitted, a quick decision made by organizers to maximize the time with students while attempting to remain punctual.

Evaluation

Next, the Evaluation Center provided a pen-and-paper survey for the participants. Evaluation is a component of all ENNTICE activities.

Implementation note: This segment was made as brief as possible, and the evaluation was truncated, to end on time.

Sendoff and Celebration

As a final act before adjourning for lunch, the organizers then had everyone in attendance give the new faculty a round of applause. This was intended to both thank the new faculty for their time and to welcome them to the engineering faculty.

Implementation Note: As the evaluation ended, additional people arrived for the lunch, and there was a general sense of time pressure building. By the time the new faculty completed their evaluations, that group included department chairs, information technology (IT) professionals, and others joining the group for the catered lunch. Still, the organizers paused and invited this whole group to offer a rousing round of applause for the new faculty. This was a deliberate choice. Collecting evaluation data is essential, but the organizers did not want quiet evaluation reflection to be the last component of the Welcome Academy. They certainly have no objection to writing! But there was a consensus, including by the evaluator, that writing evaluation comments was not a celebratory finale. The morning therefore ended on a positive note, with new faculty proceeding to lunch, and the ENNTICE organizers achieving a sense of relief and accomplishment.

ANALYSIS—DOES THE DESIGN WORK?

Reflecting on the design of the Welcome Academy for New Faculty identifies a list of things that went well and a complimentary list of things that went poorly. We interpret each, in turn, in the spirit of continuous improvement.

Many aspects of the design were successful in the first iteration. Perhaps most fundamentally was the success of the basic premise, that presenting new pedagogies and

perspectives to new faculty does not trigger resistance because, to new faculty, these pedagogies and perspectives are not a shift from well-established habits. On the contrary, the new faculty were consistently engaged and participatory, perhaps reflecting the deliberately positive tone—with mindful attention to body language, posture, and eye contact—demonstrated by the organizers. The organizers deliberately ended on a positive note, informed, in part, by Kahneman's (2013) observation that endings provide wildly disproportionate weight to our perception of experiences. Considering that resistance is endemic to many kinds of faculty participation, the lack of resistance in this case is notable.

Turning now to the content of the Welcome Academy, another success was including the larger FLC, not just the leadership team, in the process of brainstorming what new faculty need to know about DEI. Particularly in May 2022, after one year of COVID-19 lockdown and another year of teaching through masks, it was liberating to gather outdoors, in a natural setting. Being out of our regular setting physically helped us to venture out of our regular setting mentally.

Moving chronologically through the Welcome Academy, several things went particularly well: (a) Demonstrating active learning through the baseline survey, think-pair-share exercise, and the resources annotation exercise, (b) Participating in the campus tour to see the campus, not just as a collection of academic buildings, but as a collection of stories from former residents, and (c) hearing the voices of students to underscore the more abstract demographics and the data presented earlier.

We note that the campus tour was at once the highlight of the Welcome Academy and its principal glitch. The brisk walk outside on a cool, mostly sunny day in August was refreshing. Hearing the history from the tour guides and the insights of former residents was engaging beyond what can be accomplished with a slide presentation. But because the tour was not organized by the same people who organized the academy, and because everyone sought to respect the former residents, it created the scheduling bind we experienced. This exact problem is unlikely to happen again; however, there is still a lesson to be learned. Rather than conclude we should not engage in these kinds of external experiences, we instead realized we should design the schedule for additional flexibility. For example, we can avoid scheduling guest speakers immediately after a component we have less control over. We can also communicate the schedule and other constraints more clearly with those facilitating these kinds of external experiences.

Beyond the Welcome Academy, several other lines of evidence highlight successes. First, the evaluation report documented that participants stated that the Welcome Academy increased their understanding of DEI initiatives at CEDC, predicted that the Welcome Academy would be useful as they settle into their new positions, and planned to incorporate Welcome Academy lessons into their new roles as faculty. Verbatim reflections from the five new faculty are provided in Table 3. Second, one of the new faculty accepted the invitation to join the FLC and has been an active participant ever since. Third, when it was determined that the college would be hiring four or five new engineering faculty in August 2023, the dean's office immediately scheduled the second annual Welcome Academy, once again managing the space and catering logistics, demonstrating institutional support for this new practice.

FACULTY	RESPONSE
A	DEI
B	Students' needs and diverse backgrounds.
C	The history of the campus as described via the tour.
D	Students are diverse. We should adapt with the help of campus resources.
E	Being inclusive in the classroom setting, especially as the student body is unconventional and diverse.

TABLE 3. New faculty participants respond, "What is the most important information or message you are taking away from today's Welcome Academy?

While certain aspects went well, there were also design tensions revealed by the implementation. The first trouble was how to proceed when one participant in such a small group does not arrive on time. This reveals an underlying, unexamined bias. As engineers, we tend to emphasize precision and place a high value on adhering to a timetable. For the Welcome Academy, a greater value should be placed on fostering human connection and providing time for reflection. Any timetable must reflect these needs, and therefore be more flexible. Where it cannot be flexible, such as the start times of guest speakers, we must design flexible activities on either side. That way, we can respect the time of guest speakers, in this case, our tour guides and student panel, while still providing a good experience for participants.

Given the time constraints, the design needs to include fewer activities and foster more discussion. These can more easily fit around special guests and ensure we respect their time. Instead, we plan to add a follow-up appointment for each new faculty member with a member of the design team. This spaced event can allow for individualized questions, which may only arise after more time for reflection.

Beyond these particular lessons learned, we have also reflected on what additional information—if any—we might have collected from participants before the Welcome Academy. Such information would allow us to customize the academy to their background, experience, and perspective at the expense of adding additional preparatory work for each iteration of the Welcome Academy. In parallel, we have speculated on the advantages and disadvantages of inviting a larger cohort of new faculty, including those starting in August 2020 and August 2021, after the COVID-19 lockdown, but before the first Welcome Academy in August 2022. On the one hand, we were eager to share our perspective with as many faculty as possible; on the other hand, we were reticent to invite 2nd or 3rd year faculty, simply because they are no longer new, and may therefore offer resistance. In the end, we elected to require participation (through expectations set by the dean's office) for new faculty, while inviting 2nd and 3rd-year faculty without requiring participation. No invitees attended except those required to attend, which, alas, may be a commentary on the perceived value of inclusive teaching at American engineering colleges. That is exactly the default perception this work aims to reset.

CONCLUSION

The work described here reports two elements. The first is the Welcome Academy itself, which was largely successful in its first iteration at our college. Certain aspects of this Welcome Academy will be transferrable to other institutions since many schools are striving for inclusive teaching. Perhaps the single most important transferrable element is resetting a better default to welcome engineering faculty—or perhaps faculty in general—to the art and science of inclusive teaching. Having said that, many crucial aspects will inevitably be institution specific. In that light, the specific content and format of our Welcome Academy may be less important than our design process.

The second element reported here is the design process leading to the Welcome Academy. To borrow a concept from computer science, one may conceptualize this process as pseudocode: Start with a demonstrated need—in our case, this need is for engineering faculty to become aware of best practices for inclusive teaching. Co-develop the design with others—in our case, these others were participants in a multi-year FLC. Spur creativity by breaking free from the physical constraints of the regular workspace, be it on campus or through video-conferencing—in our case, we visited a state park about 60 minutes from campus. Then, having identified the need, built the team, and provided space for creativity, created the faculty orientation using elements of human-centered design—in our case, we deliberately connected new engineering faculty to elders from the neighborhood that became the campus, students and alumni from our programs, and faculty new and seasoned. And then finally deliver the orientation while collecting evaluation data that will foster improvement through iteration—in our case, lessons learned emphasized communication, respect, and flexibility.

These last lessons highlight how our unexamined bias favoring precise timetables diminished the impact of our design. By accepting that productive discussion and reflection appear "inefficient" to our engineering mindsets, even while those activities are quite effective, future iterations of this design will better support the shifts in thinking and behavior we want to support.

ACKNOWLEDGMENTS

This work is supported by the U.S. National Science Foundation through award #2040095. Evaluation for this project was provided by Christine Velez and Amelia Iglesias of The Evaluation Center. The authors thank Arianne X. Collopy and Marie Evans, who provided research support for ENNTICE, and two anonymous referees, who provided constructive feedback on the draft manuscript.

ENDNOTES

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