

## **Board 354: Project ELEVATE: Promoting Sustained & Equitable Change Among Black, Latinx, and Indigenous Engineering Faculty**

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# **Project ELEVATE: Promoting Sustained & Equitable Change Among Black, Latinx, and Indigenous Engineering Faculty**

## **1. Abstract**

Carnegie Mellon University, Johns Hopkins University, and New York University created the Project ELEVATE Alliance (AGEP Grant – Division of Equity for Excellence in STEM in the Directorate for STEM Education) to develop a model promoting the equitable advancement of early career tenure-stream engineering African Americans, Hispanic Americans, American Indians, Alaska Natives, Native Hawaiians, and Native Pacific Islanders (AGEP) faculty. The goal of this AGEP Faculty Career Pathways Alliance Model (FCPAM) grant is to develop, implement, self-study, and institutionalize a career pathway model that can be adapted for use at similar institutions, for advancing early career engineering faculty from these groups. In this paper we will provide an overview of the project's successes during its first and second year. -This project is approaching the end of its second year. We will also present our process for engaging with our multi-institutional team and how we are using the results from our self-study team.

The Alliance interventions are focusing on three major pillars of activity, 1) equity-focused institutional change designed to make structural changes that support the advancement of AGEP faculty, 2) identity-affirming mentorship that acknowledges and provides professional support to AGEP faculty holistically, recognizing all parts of their identity and 3) inclusive professional development that equips all engineering faculty and institutional leaders with skills to implement inclusive practices and equips AGEP faculty for career advancement. The main pillars have informed our efforts during the early years of the grant.

Within the *Equity-Focused Institutional Change* pillar, the team collected 10 years of hiring and promotion data at CMU, NYU, and JHU to determine the hiring rates and promotion rates of AGEP and non-AGEP faculty members. Examining best practices in the faculty hiring practices in each participating engineering school ensures that a broad and deep pool of applicants are identified and equitably assessed. Additionally, this team is developing materials for promotion and tenure (P&T) committees which provide resources that they may use when requesting outside letters of reference in P&T cases. We will self-study policies, processes, and norms to ensure clarity and assess and create guidance for all faculty. Through the *Inclusive Professional Development* pillar, we developed content and implemented professional development in Inclusive Communication. With the *Identity-Affirming Mentorship* pillar, our team is developing and implementing a matching process for mentors and mentees. Moreover, this pillar will focus on building community within and across the alliance for AGEP faculty through social and networking events during the semester.

Beyond our pillars, the evaluation team conducted a Strengths Weaknesses Opportunities Threats (SWOT) analysis of the ELEVATE Alliance Team as well as mentors and mentees to assess their perceptions of our efforts. When asked if they believed Project ELEVATE is making adequate progress towards its goals and benchmarks, both groups responded positively: Alliance Team (87% agree) and mentors-mentees (88% agree). From the analysis, key strengths identified include recruitment strategy, effective collaboration, and engagement focus. Regarding improvements, respondents suggested increased collaboration, improved support from leadership, expanded participation, enhanced engagement for mentees, and the value of strategic planning for the project's future.

## 2. Introduction

Carnegie Mellon University, Johns Hopkins University, and New York University created the Project **E**quity-focused **L**aunch to **E**mpower and **V**alue **A**GEF Faculty to **T**hrive in **E**ngineering (ELEVATE) Alliance (National Science Foundation Awards #2149995, #2149798 #2149899 from the Division of Equity for Excellence in STEM in the Directorate for STEM Education) to develop a model to promote the equitable advancement of early career tenure-track engineering faculty from populations of interest to the Alliances for Graduate Education and the Professoriate (AGEP) program.

The goal of this AGEF Faculty Career Pathways Alliance Model (FCPAM) is to develop, implement, self-study, and institutionalize a career pathway model that can be adapted for use at other similar institutions for advancing early career engineering faculty from these groups. In this paper we will provide a progress report of this project which is now in its second year. We will also present our process for engaging with our multi-institutional team and how we are using the results from our self-study team.

Figure 1, illustrates the three major pillars of the Alliance interventions, 1) equity-focused institutional change designed to make structural changes that support the advancement of AGEF faculty, 2) identity-affirming mentorship that acknowledges and provides professional support to AGEF faculty holistically, recognizing all parts of their identity and 3) inclusive professional development that equips all engineering faculty and institutional leaders with skills to implement inclusive practices and equips AGEF faculty for career advancement. The main pillars have informed our efforts during the initial years of the grant.



**Figure 1. Project ELEVATE Framework developed by the team**

## 3. Equity-Focused Institutional Change

Within the Equity-Focused Institutional Change pillar, the team worked with the internal evaluators to complete a baseline analysis of institutional documents. During that process they examined documents related to hiring, onboarding, promotion, tenure, professional development and mentoring of tenure-track faculty. For faculty hiring, the review focused on how to ensure that a broad and deep pool of applicants are identified and equitably assessed. They also identified common practices among the three institutions as well as unique approaches by each institution. One common problem identified is that there remains a difficulty in tracking and monitoring the proportion of candidates from the underrepresented group at different stages of the search process (e.g. preliminary interview and full interview, respectively), except at the last stage when the final selected candidates accept the offers. Another common challenge is to

actually recruit the candidates from the underrepresented population once they are offered faculty jobs, because they are typically sought-after by multiple high ranked institutions.

The team is reviewing, for each alliance institution, the current guidelines and policies for promotion and tenure and current practice in providing training for tenure-track faculty regarding the tenure and promotion process, and for the departmental and school level promotion and tenure (P&T) committees. Although all the alliance institutes provide training for tenure-track faculty regarding the tenure and promotion process, the committee identified the need for providing training for faculty and department chairs involved in tenure and promotion, on aspects such as how to minimize unconscious bias, how to weigh the social impact vs. bibliometrics of research projects, and how to judge independent vs. collaborative research. The team will eventually develop training materials for department chairs and promotion and tenure (P&T) committees and will also develop resources that the department chairs or the P&T committees may use when requesting outside letters of reference in P&T cases. The team will continue to study policies, processes, and norms to ensure clarity and assess and create guidance for all faculty.

The team also identified unique strengths of each engineering school in faculty development and mentoring. For example, Carnegie Mellon provides a visual representation of tenure timelines that highlight the process of tenure and promotion review and a checklist to navigate the process. New York University provides a matching-based mentoring process so that a tenure-track faculty can select and change their mentors based on the areas that they would benefit most from the mentors at different stages of their career. NYU further provides training to both mentors and mentees so that both know what to expect for their roles. Finally, Johns Hopkins University has a faculty launch committee that provides structure for new faculty members to have multiple mentors and multiple avenues of support.

The team is in the process of collecting 10 years of both hiring data and promotion and tenure data to determine the hiring and promotion rates of AGEP and non-AGEP faculty members. Hiring data is insufficiently detailed to allow the team to assess the rates at which AGEP faculty applicants progress through each of the multiple steps required to secure an offer of appointment. However, the team is identifying those aspects of the recruitment processes that lead to more success for AGEP candidates at elite private institutions. More complete data is available on the promotion and tenure of AGEP faculty members, but the number of faculty members who have gone through the process is too low to draw statistically robust conclusions. In this context, the team is pursuing ways to determine what procedures inspire AGEP faculty members to have confidence in the equity of the promotion and tenure process. The team also recommends rigorous data collection for both faculty hiring and promotion from here onwards, to monitor long-term trends.

At the conclusion of this baseline review process, the team found that document accessibility and faculty evaluation criteria were not always clear at all three institutions. Additionally, many of the institution materials mentioned diversity, equity, and inclusion generally but did not connect those terms to supporting faculty based on social identities.

#### **4. Inclusive Professional Development**

The Inclusive Professional Development team's planning for 2023-2024 began with a workshop with the ASPIRE National Change Co-leads in March 2023 to learn about the Inclusive Professional Framework (IPF) [1]. During the 2023 summer, the team also participated in the Aspire Summer Institute (ASI), sponsored by the NSF Eddie Bernice Johnson INCLUDES

Aspire Alliance to start developing the content for sessions in inclusive communication. The ASI was a week-long virtual workshop that gave the team an opportunity to retreat, reflect and act to better support the Project ELEVATE professional development pillar. Through the ASPIRE summer institute, the team developed the following long-term goal:

“Implement inclusive professional development that equips all engineering faculty and institutional leaders with skills to implement inclusive practices and to support career advancement of faculty from AGEP populations.”

Through the brainstorming sessions during the ASI, the team also developed several desired outcomes and came up with community partners that would be important for the implementation of the sessions.

The Project ELEVATE implementation plan for 2023-2024 was to design, develop and implement three training sessions at the three alliance institutions. The Inclusive Professional Framework (IPF) provided a foundation for all our professional development sessions. The first session developed and implemented covered “Inclusive Communication”. As faculty have different backgrounds and experiences, the team designed and developed the program to introduce faculty to begin thinking about how to be inclusive in communication with other faculty, staff, and students. In “Inclusive Communication,” participants reflected on the features of an inclusive climate and how our identities impact communication in the workplace. Our content was designed with time for individual reflection and included some group discussion. For Inclusive Communication implementation, the team worked with an adjunct instructor and professional coach with experience in delivering professional development to corporate teams. Sessions were advertised on campus through emails and electronic flyers. The “Inclusive Communication” training sessions were designed to be implemented in person, on each campus in the Fall semester. At NYU, the scheduled sessions were scheduled by department, with five sessions over two days. At CMU, the sessions were scheduled for the entire engineering faculty community, with two sessions across two days. Due to scheduling constraints, the sessions were designed to be 60-90 minutes and were implemented on the campuses of NYU and CMU. Additional sessions are scheduled at Johns Hopkins University for Spring 2024.

The team also hosted two virtual sessions on “Inclusive Teaching” in Fall 2023. These sessions were held over zoom with all three institutions participating. Through these virtual sessions, participants were given the opportunity to (1) Reflect on their current teaching practice; (2) Discuss key principles and consider strategies for inclusive teaching; and (3) Create an action plan for future teaching. For the inclusive teaching sessions, there were 62 participants, which included tenure-track faculty, teaching faculty and researchers at the three alliance institutions.

The third training course scheduled for this year was entitled "Thriving Interactions with PhD Students and Post-Docs". It was designed and pilot-tested in-person at NYU in March 2024 with the following goals:

- (1) Raise awareness of the challenges faced by STEM graduate students in terms of aspirations, daily life and mental health, interactions with advisors, and of the need to change;
- (2) Assist faculty to develop meaningful interactions focused on key principles such as awareness, identity, empathy, vulnerability, openness, and inclusivity; and
- (3) Deliver practical guidance for fostering meaningful, productive, and inclusive day to day interactions with PhD students and Postdocs.

Going forward with further implementation in NYU departments, the format at NYU will be 60 minutes with an additional 30 minutes for exchange and experience sharing. For alliance

institutions, CMU and JHU, development and implementation will take place in summer/fall 2024.

For the upcoming year, the Inclusive Professional Development will continue to implement professional development at Project ELEVATE institutions. The team will build on the content from the first year of professional development to facilitate discussions on the three campuses in the areas of inclusive communication and inclusive teaching.

## **5. Identity-Affirming Mentorship**

Effective mentorship is particularly critical for the retention and advancement of faculty members from groups ethnically or racially underrepresented because they experience unique identity related challenges in the professoriate such as less access to institutional capital, higher service burdens, daily microaggressions, and racial battle fatigue [2]. Despite the importance of mentorship for enhancing productivity and career success in the high stakes research culture of our institutions, there is uneven implementation and oversight of mentoring for junior faculty across our Alliance institutions. Therefore, a strong mentorship network with supportive peers and senior faculty is key for the success of early career faculty members from these groups. Through the Identity-Affirming Mentorship pillar, our team has developed and begun to implement a mentor matching process for early career faculty and tenured faculty. This pillar also focuses on community building within each institution and across the Alliance for Project ELEVATE early career faculty through professional development and social and networking events during the semester.

To identify senior faculty mentors who would be most supportive of the Project ELEVATE early career faculty, the Project ELEVATE leadership team at each institution identified full professors, who are collegial, empathetic, willing to leverage their social capital, motivated to help early career faculty members grow, and committed to diversity, equity, and inclusion. These individuals will offer cross-institutional mentoring so each mentor will be matched with an individual outside of their home institution who can provide expert advice/insight and sponsorship to accelerate career advancement. Most of the individuals identified through the selection process are leaders and/or respected community members in their institutions. The final mentor group includes two center directors, 2 department heads, 1 president emeritus, and three named professors.

The identified institutional mentors participated in an onboarding process that included attending the Center for the Improvement of Mentored Experiences in Research (CIMER) training which focuses on maintaining effective communication, aligning expectations, addressing equity and inclusion, articulating your mentoring plan, assessing understanding, fostering independence, identity, intersectionality and promoting professional development. In addition, faculty mentors who attended the 2023 Project ELEVATE retreat participated in a “Rethinking Mentoring” session facilitated by the National Center for Faculty Development and Diversity.

To enhance aspects of identity-affirming mentorship, we are also leveraging the collective expertise of senior faculty from historically ethnically and racially underrepresented groups across the nation, including our institutions, through our guest mentor network. The goal of the guest mentor network is to broaden the connections of our Project ELEVATE faculty, provide insights on navigating challenges that stem from racism, marginalization, and bias, and inspire our faculty to think about and prepare for the many career paths in academia post tenure. We engage our guest mentor network in high impact sessions with the early career faculty once a

semester and during the summer retreat. We will also utilize this network to help equip the Project ELEVATE mentors with cross-cultural communication skills and awareness of the importance of identity, positionality, and intersectionality in shaping the experiences of the early career faculty.

To date, Project ELEVATE early career faculty have connected through a virtual kick-off meeting, an annual retreat and a virtual mixer with Project ELEVATE mentors. The virtual kick-off meeting in January 2023 featured two guest mentors who spoke about their professional journeys. The first annual retreat in June 2023 included interactions with Project ELEVATE faculty mentors around topics such as community engagement and funding and a guest mentor who talked about his work in diversity, equity, and inclusion. Finally, the most recent event in January 2024 was a virtual mixer using the Gathertown platform to allow for networking and connections between our early career faculty and mentors. At the conclusion of the event, the early career faculty connected with the individuals who were willing to serve as their faculty mentors. To assist with the matching process, the team developed a mentor profiles document that compiled the bios of our faculty mentors and included their responses to the following questions:

1. How do you mentor? (what is your mentoring philosophy)
2. Why do you mentor?(what is your motivation)
3. Favorite book, tv show, or podcast
4. Hobbies

We then sent the mentor profiles to the early career faculty and asked them to provide the names of the 2-3 faculty that they connected with the most. The team met to review the responses and developed a process to assign the matches that resulted in 80% (12/15) of the early career faculty matched with their top choice.

Finally, at the end of February, we matched all the Project ELEVATE faculty members with senior faculty mentors. The expected engagement for Project ELEVATE mentees and mentors is monthly virtual meetings, in addition to connecting at the annual conference.

## **6. Assessment**

Beyond the three pillars, assessment is paramount to develop an effective model to promote the equitable advancement of early career tenure-stream African American, Hispanic American, American Indian, Alaska Native, Native Hawaiian, and Native Pacific Islander faculty. This assessment approach must also be culturally responsive [3] to examine the contextual factors and outcomes associated with the development, implementation, and dissemination of the model. Therefore, both the internal and external evaluation teams continually assess the project, and these teams are included in monthly project meetings.

The internal evaluator completed a SWOT (Strengths, Weaknesses, Opportunities, and Threats) analysis of the Project ELEVATE Alliance work, which included engaging the leadership team, faculty mentors and early career faculty. Key strengths of the project to date include the strategy to recruit early career faculty and faculty mentors, the effective collaboration of the team and the team's focus on engagement. In fact, both the Alliance leadership team (87%) and the mentors-mentees (88%) agree that Project ELEVATE is making adequate progress towards its goals and benchmarks. However, the assessment from these groups also indicated increased collaboration, improved support from leadership, expanded participation, enhanced engagement for mentees, and strategic planning for the project's future would be helpful additions.

The external evaluator's assessment process focused on the characteristics of highly effective teams in traditional and digital contexts, which include monitoring team composition and turnover, distribution of roles and responsibilities, clearly formulated common goals, shared expectations, knowledge and knowledge-sharing, supportive and coaching leaderships, collaborative decision-making and the communications infrastructure and plan [4]. Some of the team's strengths included its diverse expertise, the support from each institution's dean, the transparency of key documents, consistency of team meetings, institutional representation on each committee and about the project, and the growth mindset of the team. Some of the challenges include varied diversity, equity and inclusion knowledge at each institution, lack of transparency in sharing committee work progress, and a need for clarification of roles.

## **7. Conclusion**

While Project ELEVATE is only in the second year of the project, the team is making progress in building an infrastructure for future success. The equity-focused institutional change team is identifying some of the obstacles that need to be addressed in the faculty advancement process. The inclusive professional development team is beginning to implement educational sessions at each institution and the identity-affirming mentorship team is beginning to bring faculty together as a community. To continue the trend of success, the Project ELEVATE leadership team must incorporate training related to team science, including team formation. They must also develop transition and conflict management plans and clarify roles and responsibilities for each committee and its members.

## **8. Acknowledgments**

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