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Evaluation of KPIs in the RWJF Sub-Aim Tracking Framework

Overview: Below we critically evaluate each of the 10 proposed Key Performance Indicators (KPIs) for the RWJF-funded DEI initiative. For each KPI, we provide a **score (1–10)** based on: (a) strategic alignment with the Aim's goals, (b) actionability for decision-making, (c) feasibility of data collection, and (d) rigor/potential for new insights. We then discuss **strengths and weaknesses** in light of current literature and best practices in DEI, medical education, pathway programs, and faculty development. Finally, we suggest **refinements or alternative metrics** to better capture **progress, equity, impact, and sustainability**. The goal is to ensure each KPI is not only measurable but genuinely useful for guiding improvements and producing publishable insights year over year.

KPI 1 (Aim 1a): Cultural Humility & Trauma-Informed Training Initiative

Description: *Implement cultural humility workshops for all students/faculty and trauma-informed teaching policies (e.g. content warnings, flexible deadlines), with documentation of equity-centered care practices.* **Proposed measure:** e.g. % of constituents completing training; number of courses adopting trauma-informed practices; improvements in climate survey scores on belonging.

Score: 7/10. Alignment: High – directly targets Aim 1a's goal of embedding DEI into everyday policies/practices. **Actionability:** Moderate – training completion rates and policy adoption can inform further interventions (e.g. identify departments lagging), but translating those into improved outcomes requires follow-up. **Feasibility:** High – tracking participation and policy changes is straightforward (attendance logs, policy documents). **Rigor/Insight:** Medium – completion counts are easy "box-checking" metrics; deeper impact (actual behavior or climate change) is harder to measure without additional qualitative data or longitudinal surveys.

Strengths: This KPI addresses **structural culture change** by ensuring everyone undergoes bias/humility training and by modifying teaching policies to be trauma-informed. Literature supports that comprehensive, institution-wide DEI training and policy reforms can improve inclusivity. For instance, institutional self-assessments and DEI training are associated with sustained progress in climate and culture [1] [2]. Requiring 100% participation signals leadership commitment and can standardize expectations of respectful, empathetic behavior. The trauma-informed approach (e.g. acknowledging students' external stressors) may foster a greater sense of belonging for marginalized learners. A **strength** of this KPI is its immediate visibility – e.g. **counting training completion** is a clear, communicable result. It can also be linked with **climate survey** data (e.g. DEI climate or belonging scores) to see if perceptions of inclusion improve after interventions. Using a validated climate tool would add rigor; for example, the AAMC's new **equity/inclusion climate survey** shows promise as a way to quantify student perceptions of inclusion [3] [4]. Such data can generate insights if, say, departments with higher training compliance show improved climate scores relative to others.

Weaknesses: A key concern is **relying on output over outcome**. Simply tracking the number/percentage of faculty and students trained may become a "check-the-box" exercise that doesn't prove attitudes or behaviors changed [5]. Evidence on the **effectiveness of one-time implicit bias or cultural competency trainings is mixed** – many interventions show only short-term knowledge gains or even risk backlash if done poorly [5] [6]. Thus, this KPI might falsely indicate success (everyone trained) even if day-to-day culture doesn't markedly improve. Another weakness is measuring **policy adoption** (like adding trigger warnings or flexible deadline policies) without measuring their impact. We may document that, say, *X* course syllabi now include trauma-informed practices, but we should ask: Are students from underrepresented or trauma-affected backgrounds actually reporting better support and less harm? If the KPI doesn't capture that (for example, via student feedback or outcomes), it remains an **output metric**. Additionally, implementation quality matters – e.g. if trainings are perfunctory or policies not enforced, the strategic impact wanes. In summary, KPI 1 in its basic form risks emphasizing quantity (trained , policies written) over quality (did it change anything?). As one commentary notes, *"the evidence for the effectiveness of implicit bias training is nascent"* and poorly executed training can even **create a false sense of security** or **worsen anxiety** among participants [5] [6]. This underscores the need to go beyond counting training sessions.

Refinements: To enhance this KPI's usefulness, we recommend:

- **Coupling outputs with outcomes:** In addition to training completion rates, measure **pre- vs. post-training changes** in participants' knowledge or attitudes (e.g. using validated surveys or vignettes). Also track **climate outcomes** (via annual DEI climate survey scores on belonging, respect, etc.) to see if they improve following the interventions [3] [4].
- **Integration into performance metrics:** Instead of one-off tracking, make cultural humility a sustained metric (e.g. % of new faculty trained within 1 year of hire, inclusion of DEI competencies in evaluations). This would improve sustainability by embedding it in HR processes.
- **Qualitative feedback:** Include focus groups or open-ended survey items where trainees and students report whether the training/policies have affected their behavior or sense of inclusion. This can yield insights (publishable narratives or best practices) beyond the numeric KPI.
- **Benchmark against best practices:** For trauma-informed education, consider metrics like "# of departments that have adopted trauma-informed teaching guidelines" *and* follow up with student well-being indicators (absenteeism, requests for accommodations) as proxy measures of impact. Comparing these to benchmarks or other schools' data (if available) can provide context.

By refining KPI 1 to measure **both implementation and impact** (e.g. tracking policy adoption **and** changes in student-reported inclusivity or well-being), we ensure it guides future decisions (which trainings or policies are most effective) rather than just documenting that an activity occurred.

KPI 2 (Aim 1b): Peer Mentorship Network & Faculty Retention Dashboard

Description: *Establish a 3-tiered peer mentorship program (pairing faculty with students and peer circles for faculty) and a "Mentorship Impact Dashboard" tracking faculty outcomes.* **Proposed measures:** Participation in mentorship activities; and **faculty retention rates and grant/funding success** of mentored faculty, reported biannually [7].

Score: 9/10. Alignment: Very high – directly attacks faculty isolation and attrition issues identified in Aim 1b. By tracking retention and success of mentored faculty, it aligns tightly with the goal of combating attrition through structured support. **Actionability:** High – retention rates and funding success are outcome metrics that can trigger action (e.g. if certain groups still have high turnover, adjust the mentorship approach). **Feasibility:** Moderate/High – tracking who participates in mentorship and their employment status or grant success is feasible with HR records and grant databases, though attributing causation to mentorship may require care. **Rigor/Insight:** High – of all KPIs, this one seeks **meaningful outcomes** (retention, career advancement) rather than just activities. If properly analyzed (e.g. comparing mentored vs non-mentored faculty), it can generate new insights about mentorship effectiveness [8].

Strengths: The mentorship KPI is grounded in evidence-based practice. **Mentoring programs for underrepresented and junior faculty have consistently been shown to improve retention, promotion, and productivity** [8]. A systematic review in *Family Medicine* found that across multiple institutions, structured mentoring and faculty development led to higher retention and academic promotion rates for minority faculty [8]. By tracking **faculty retention**, this KPI focuses on a **critical outcome** for sustainability – keeping talented faculty (especially those from URM groups) is essential for an enduring culture of diversity. It's also actionable: if the dashboard shows, say, a dip in retention in a certain department or demographic, leadership can respond with targeted interventions (additional support, policy changes, etc.). Including **"success with funding"** on the dashboard is another strength [7]. It encourages measurement of faculty scholarly progress (grants won, etc.), aligning with the notion that mentoring should foster not just staying in the job, but thriving in career advancement. Such data could yield publishable findings, for example: *Does participation in the mentorship network correlate with higher grant submission or publication rates?* This KPI also drives future improvement because it will require **biannual reporting to leadership** [7], ensuring continual attention. Another strength is the **incentive linkage** – the plan is to count mentorship participation toward promotion criteria [9]. This structural change means the KPI isn't in a vacuum; it's tied into career advancement systems, likely boosting participation and long-term impact (and itself could be a metric: % of departments that incorporate mentorship in promotion criteria).

Weaknesses: One challenge is ensuring **data attribution and context.** If retention improves, can we confidently credit the mentorship program? Faculty retention can be influenced by many factors (salary, personal life, etc.). The KPI will be more informative if it can compare mentored vs non-mentored faculty retention, but ideally all faculty will be mentored (the goal), leaving no control group. This could make it hard to tease out impact without historical baselines or external benchmarks. Another potential weakness is **collection feasibility over time** – tracking retention is straightforward, but tracking "success with funding" for each mentored faculty might require significant data coordination (grant office, department reports). We must also be cautious of time lag: improved funding or promotion rates might not materialize immediately; junior faculty often take years to secure grants. Thus short-term tracking might show little change, which could be misleading. Additionally, **mentorship quality** is not directly measured. High participation rates or mentor-mentee pair counts don't guarantee effective mentoring relationships. If the KPI is purely quantitative (e.g. number of mentorship sessions held, % faculty with a mentor), it might overlook qualitative aspects like mentor training or mentee satisfaction. Literature emphasizes that *effective* mentorship (with training, proper matching, institutional support) is what drives outcomes [10] [11]. Without assessing quality (perhaps via surveys of participants' satisfaction or perceived benefit), there's a risk of a superficial program that hits numeric targets but misses impact. Lastly, focusing on retention rate as a KPI in a small institution could be tricky – if the absolute number of faculty is small, natural turnover (retirements, relocations) could spike the percentage in a given year unrelated to mentorship efficacy. This variability means the KPI should be interpreted over a multi-year trend.

Refinements: We suggest the following to strengthen KPI 2:

- **Incorporate qualitative and satisfaction metrics:** Supplement the dashboard with data from faculty surveys (e.g. % of mentored faculty who report feeling supported in career development, or who credit the program with helping them) and track **mentor/mentee meeting frequency** or goals achieved. This ensures the KPI captures the *quality* of mentoring, not just the existence.
- **Disaggregate retention data by key groups:** To emphasize equity, monitor retention specifically of URM faculty vs others, and junior vs senior faculty, over time. Effective mentorship should particularly improve URM junior faculty retention (addressing known disparities [12] [8]). If not, the program may need tweaking.
- **Benchmark against national data:** Compare the faculty attrition rate with available benchmarks (e.g. AAMC data) or similar institutions. If national average annual attrition is ~5%, and HUCM's mentored faculty attrition comes in at 3-4%, that's a tangible success (mirroring other leadership-development programs that saw attrition drop from ~5.3% to 3.6% [13]). Such comparisons provide context and could be publishable.
- **Use retention and success stories as feedback:** Consider a narrative component – e.g. track how many mentored faculty achieved promotion or major grants *and publish* a brief case study or toolkit on mentorship strategies that worked. This moves the KPI from just monitoring into generating insights for the field (what mentorship models yield results?).
- **Ensure sustainability:** Given mentorship's long-term nature, plan to track cohorts even beyond the grant period. A sustainable metric might be "establishment of a permanent Office of Faculty Mentorship with annual reporting," which would indicate the infrastructure will remain.

By refining this KPI to include **both quantitative outcomes and qualitative feedback**, and by focusing on equity gaps in retention, HUCM can use it not only to monitor success but to continuously improve the mentorship model. This aligns with best practices where mentorship programs are iterative and data-informed [10] [8].

KPI 3 (Aim 1c): Anti-Racism Curriculum Integration and Innovation

Description: *Integrate JEDI (justice, equity, diversity, inclusion) principles into the medical curriculum.* This includes revising curricula to **debunk race-based myths** (e.g. removing race-based eGFR calculations), teaching about social determinants of health in clinical care, adding simulation cases on inequities, and funding micro-grants for faculty to redesign courses [14] [15]. **Proposed measures:** Number of courses or sessions revised to include anti-racism/SDOH content; number of faculty micro-grants awarded for curricular innovation; possibly student feedback on curriculum changes.

Score: 8/10. Alignment: High – core to Aim 1c's goal of making anti-racism "foundational" in training. Curriculum change is a direct strategy to institutionalize these principles. **Actionability:** Moderate – counting revised courses or grants is useful for tracking implementation, but the **impact on student competence** needs assessment to fully guide education decisions. Still, if certain topics aren't being integrated, that signals where to act (e.g. if only 2 of 10 departments revised content, target the rest). **Feasibility:** High – it's straightforward to track how many courses add specified content or how many micro-grants are given (the dean's office can require reports from curriculum committee and grant recipients). **Rigor/Insight:** Moderate – simply tallying curriculum changes is another output measure; however, this KPI has potential to generate research if paired with evaluation (e.g. testing students on knowledge/attitudes pre and post curriculum changes, or analyzing differences in USMLE or other assessments related to

SDOH). In literature, evaluating curriculum reforms often produces publishable findings on student outcomes or attitudes.

Strengths: This KPI targets the **educational mission** directly. By incentivizing faculty with micro-grants to modernize courses, it embeds DEI into the teaching fabric (not just extracurricular). A strength is its focus on **structural and content change** – for example, making sure genetics lectures explicitly refute the false biological basis of race, or clinical scenarios include navigating patient socioeconomic barriers [16]. These are concrete changes that can be observed and counted. Counting the **number of courses updated** is a visible marker of progress (e.g. "We revised 15 modules across year 1-4 to incorporate anti-racism and health equity content"). Importantly, the KPI can foster **faculty engagement**: micro-grants (even $2,000) motivate faculty to participate in DEI curriculum work [15]. Tracking how many faculty take up these grants and what innovations they implement can yield insights – perhaps some curriculum changes will be very successful (as measured by student feedback or performance) and can be expanded or written up. From a peer benchmarking perspective, many med schools are grappling with integrating anti-racism; HUCM's approach (and metrics on it) could serve as a model. There is evidence that students value such integration – AAMC Graduation Questionnaire data show that students increasingly report that diversity in their training improved their skills to work with different backgrounds [17]. Ensuring curriculum addresses racism and SDOH should increase positive responses on such items. If we measure those (e.g. % of graduating students who agree that "our curriculum adequately addressed racial health disparities"), it directly connects to impact. Another strength: this KPI pushes *innovation* rather than status quo. It's not just "include a lecture on disparities," but redesign pedagogy (digital modules, simulations, etc.), which can be more engaging and effective. That innovation focus aligns with scholarly output – faculty might publish on their curriculum interventions (with IRB approval, changes in student knowledge can be studied). Thus, KPI 3 could lead to **publishable educational research**, fulfilling the "new insight" criterion.

Weaknesses: The main weakness is again the risk of **measuring effort, not effect.** Counting courses or grant projects doesn't tell if students are actually more competent in equity-centered care. Without an outcome metric (like student assessment results, OSCE performance on related cases, or attitude shifts), we might pat ourselves on the back for integrating content, yet students might still feel unprepared to address racism in practice. Also, curriculum reform is a long game; some changes (like new course content) might not roll out fully within the 2-year grant window. If the KPI is too short-term (e.g. number of courses changed in a year), it may not capture meaningful adoption or could even incentivize superficial changes (e.g. hurriedly adding a slide on disparities to a lecture just to count it). Another challenge is **comparability and quality control**: not all "DEI content" is equal. One course might deeply engage students in structural competency, while another might just add a brief mention of race. The KPI as stated might count them equally ("2 courses updated"), missing qualitative differences. Faculty may also need training to effectively teach these new topics – if not measured or supported, the impact might be blunted (i.e. poorly delivered content can fall flat or even cause misunderstanding). Additionally, **student reception** is a factor: changes could initially be met with resistance or fatigue if not done thoughtfully. There's literature noting that adding content on bias/disparities without altering assessments or faculty attitudes can create a "hidden curriculum" conflict. If not handled, students might perceive it as lip service. None of these issues are captured by a simple count metric. Finally, an equity consideration: is the new curriculum benefitting all students? If we only measure number of changes, we might not notice if, say, underrepresented students still report gaps in belonging or if majority students remain unconvinced of the material's importance. We'd need more nuanced evaluation to catch that.

Refinements: To make KPI 3 more robust and insightful:

- **Add outcome measures for students:** For example, incorporate questions in exams or OSCEs related to SDOH and measure improvement in scores. Use the AAMC Graduation Questionnaire (GQ) items on cultural competence and health equity (e.g. "adequacy of instruction about disparities") as a yearly metric – aim to see an uptick in positive responses [17]. If the new curriculum is effective, **students should feel better prepared**, which can be quantified.
- **Track student attitudes/skills pre- and post- curriculum change:** Consider administering a short survey or using an established tool to gauge students' confidence in dealing with racism in medicine or advocating for equity, before and after the revamped curriculum segment. Published studies (even student-led interventions) have used surveys to show increased awareness of racial bias after anti-racism workshops [18]. HUCM could do similar, providing data for internal improvement and scholarly publication.
- **Ensure quality via peer review or student feedback:** As part of the KPI, require that any course that was "updated" reports *how* it was updated and possibly a brief evaluation (student feedback or focus group on that session). This discourages token changes and creates a repository of best practices. The KPI could include "number of courses updated **and evaluated** positively by students."
- **Longitudinal follow-up:** Since true impact might show later (e.g. in clinical years or residency), plan to follow metrics like performance on relevant clinical skills or even alumni surveys on how well prepared they felt. While beyond the grant period, creating a mechanism for ongoing tracking makes the change sustainable.
- **Alternative metric for sustainability:** Count **policy-level changes** such as "JEDI principles incorporated into curriculum governance" (e.g. a standing DEI curriculum subcommittee, or new competency requirements for graduation). This indicates the anti-racism curriculum isn't a one-time project but a lasting part of the system.

In sum, KPI 3 should evolve from *"How many courses did we update?"* to *"Are our graduates demonstrably more equity-minded and prepared to combat racism in healthcare?"*. Combining content metrics with student outcome metrics will provide a fuller picture and ensure this KPI drives meaningful educational improvements.

KPI 4 (Aim 2): Expansion of "Mini-Med School" Outreach to 10 Title I Schools

Description: *Scale up HUCM's experiential STEM and health careers outreach programs to inspire minority youth.* The plan is to expand the existing Mini-Medical School program from a pilot in 1-2 schools to **10 Title I schools in D.C.'s underserved Wards 5, 7, 8** [19]. Activities include hands-on anatomy workshops, clinical skills demos, mentorship by medical/dental students, etc., aiming to spark early interest in health professions [20] [21]. **Proposed measures:** Number of partner schools (target = 10); number of K-12 students engaged; perhaps pre/post surveys of participants' interest in health careers; eventual enrollment of participants in pipeline programs.

Score: 8/10. Alignment: Very high – this directly serves Aim 2's goal of making health professions tangible to minority youth. It addresses the upstream pipeline. **Actionability:** High – metrics like number of schools and students reached are straightforward and can guide resource allocation (if some schools have low turnout, adjust programming; if target of 10 schools isn't met, find out why). **Feasibility:** High – counting schools, sessions, and students is easy. More nuanced outcomes (like changes in attitudes or tracking

students over time) are harder but doable with surveys and collaboration with schools. **Rigor/Insight:** Moderate – simply reporting "we reached X schools and Y students" demonstrates output but not long-term impact. However, including even short-term outcome data (like shifts in knowledge or interest) can provide publishable insights (e.g. does early exposure at elementary level increase pursuit of STEM courses?). Long-term tracking (e.g. did any of these kids later join health programs) would be very insightful but is challenging beyond the grant timeframe.

Strengths: This KPI focuses on **breadth of impact and exposure**, which is critical given evidence that early exposure can alter career trajectories for underrepresented youth [19]. A key strength is its **quantifiable reach**: partnering with 10 schools and engaging presumably hundreds of students provides a clear metric of expansion. Hitting that target demonstrates institutional commitment and community benefit in concrete terms. It's also a **visible success** story for stakeholders (e.g. RWJF can point to the number of youths introduced to medicine). The program builds on an existing successful model (the inaugural mini-med school had hands-on activities, mentorship, and even provided tools like stethoscopes [22]), so scaling it up likely has community buy-in. From a strategic viewpoint, this KPI aligns with **national diversity pipeline efforts**. Benchmark practices (like the well-known STEM pipeline programs and the AAMC's youth science initiatives) often measure participation counts and interest levels as key KPIs. Research supports that such outreach can increase participants' motivation and reduce perceived barriers. For example, the RWJF-funded SHPEP (though for college students) showed that program participants had **significantly increased motivators and reduced barriers toward health careers post-program** [23]. While SHPEP is a different stage, the principle holds: early programs can positively shift attitudes. The Mini-Med School KPI could similarly measure pre/post "interest in STEM or doctor/nurse aspirations" among participants. If data show a jump in interest or knowledge after the program, that's a powerful indicator of impact and could be shared in publications or conference presentations on pipeline programs. Another strength is **sustainability via partnerships** – by embedding in local Title I schools, the program could become an ongoing pipeline that feeds into later programs (like HUCM's HUIPP). The KPI of "10 schools" also inherently tackles equity in geographic distribution (targeting underserved wards). This breadth helps ensure the benefit isn't isolated; it's reaching multiple communities, which is important for equitable impact.

Weaknesses: A notable weakness is that **quantity ≠ quality** of impact. Counting schools and students doesn't tell us if those students truly gained anything or will pursue science further. There's a risk of "drive-by STEM events" that are exciting but have no follow-up. If the KPI is met by simply holding sessions in 10 schools, one might declare success even if, hypothetically, students in those sessions remain unconvinced or lack further support. Also, expanding quickly from 1-2 to 10 schools in two years is ambitious – maintaining program quality at scale could be difficult, and the KPI as stated might incentivize breadth over depth (spending a short time at many schools rather than sustained engagement at a few). **Data collection at the K-12 level** can be challenging: getting parental consent for surveys, tracking individual students over years (to see if they eventually apply to health programs) may not be feasible within the grant. Thus, the KPI might default to simpler counts. Another challenge is attribution and long-term outcomes – ideally, we want to know if these 10-school efforts lead to more students from those schools entering health professions pathways. But that outcome might only be visible years later (when today's 5th grader goes to college). Within-year metrics like "interest in science" are proxies and can be hard to measure reliably in young kids. Additionally, **benchmarking impact** is tricky: we might reach 300 students – is that good? Perhaps one could compare to similar outreach programs (some published outreach programs report on % of participants who later choose STEM majors, etc.). Without including such outcome data, the KPI may remain a feel-good number. Finally, scaling up could strain volunteer capacity (medical student mentors etc.), risking burnout or inconsistent delivery – not directly reflected in the KPI, but important for sustainability

beyond year 2. If the program can't be maintained at 10 schools after the grant (due to resource limits), then reaching 10 once is not truly sustainable impact.

Refinements: We recommend enhancing KPI 4 with both short-term and longer-term evaluative components:

- **Include a participant outcome metric:** Implement a simple pre- and post-program survey for the students (age-appropriate). For example, ask before and after: *"How interested are you in a health/ medical career?"* or *"Do you think you could become a doctor or scientist?"*. Even an increase in affirmative responses or science career knowledge can be measured. A previous pipeline program might be a model: one study found pipeline participants were **8% more likely to apply and 10% more likely to matriculate into med/dental school** than peers [24] – for younger students we can't measure matriculation yet, but we can measure shifts in **interest and confidence**, which are known precursors [25] [26].
- **Track engagement quality:** Instead of just number of students, track *hours of engagement per student* or *number of sessions per school*. This distinguishes a deep, recurring program from a one-off assembly. For instance, "10 schools with at least 4 sessions each and 100+ student contact hours total" is more meaningful than just "10 one-time visits."
- **Participant follow-up:** Where possible, create a way to follow these students into existing pathway programs. For example, record how many Mini-Med School participants go on to attend HU's high school summer programs or apply for HUIPP. If an integrated pipeline is established, *that* could be a KPI: "% of Mini-Med alumni who enter a health professions pipeline program within 5 years." This is forward-looking and emphasizes sustainability (the pipeline continuum).
- **Community feedback:** Solicit feedback from partner schools (teachers/principals) on the program's impact (e.g. did it improve science engagement in their classes? Any change in students' academic interests?). This qualitative piece can provide context to the numeric KPI and identify improvements.
- **Equity and reach:** Ensure the KPI tracks the demographics of participants (since even within Title I schools there's diversity). Are we reaching gender parity? Supporting those with disabilities (e.g. the mention of including deaf/hard-of-hearing students in prior programs [27])? A refined KPI could be "number of underrepresented minority youth engaged *and* demographic breakdown," aiming to confirm we are indeed reaching those the grant intends to uplift.

By broadening KPI 4 to include **evidence of increased interest/knowledge and pipeline continuity**, we can better evaluate if these outreach efforts truly "inspire the next generation" or merely provide a short-term experience. Such data not only guides future improvements (e.g. which activities resonate most with kids?) but can also contribute to the literature on K-12 health career interventions.

KPI 5 (Aim 3): Howard Univ. Interprofessional Pathways Program (HUIPP) Implementation and Outcomes

Description: *Launch the HU Interprofessional Pathways Program (HUIPP) to prepare URM college students for health professions.* HUIPP is envisioned as a comprehensive summer enrichment for 24 students/year (8 pre-med, 6 pre-dental, 5 pre-nursing, 5 pre-pharmacy) in partnership with local HBCUs [28] [29]. It replaces/ continues the expiring RWJF SHPEP. The program includes basic science prep, communication skills, wellness, cultural awareness, simulation experiences, and interprofessional teamwork. **Proposed measures:** Number of students enrolled (aim 24/year); completion rate; perhaps participant gains in knowledge (pre/post tests); eventual application or acceptance rates into health professional schools.

Score: 9/10. Alignment: Very high – this is Aim 3's core deliverable, building the pipeline at the college level. **Actionability:** High – enrollment numbers and participant performance can directly guide program scaling or curriculum tweaks (e.g. if only 15 enroll, change recruiting; if post-tests show weak areas, adjust content). **Feasibility:** High for immediate metrics (enrollment, completion, test scores). Tracking long-term outcomes (like medical school matriculation) is more challenging but feasible via alumni tracking and is a common measure for such programs. **Rigor/Insight:** High – pipeline programs like HUIPP lend themselves to formal evaluation and research. There is **extensive literature on outcomes of pre-professional programs** (e.g. SHPEP's impact on admissions, confidence, etc.), providing frameworks for rigorous measurement. This KPI can generate publishable data on how an interprofessional, culturally-tailored program affects student trajectories.

Strengths: First, simply **establishing and filling the HUIPP with 24 students** is a strong output – given SHPEP's loss, ensuring these opportunities continue demonstrates impact. The KPI of enrollment ensures the program indeed serves the intended number of students (and a diverse mix across medicine, dentistry, etc.). More importantly, this KPI naturally invites **outcome evaluation:** e.g. measure **MCAT/DAT score improvements**, admission rates, or self-efficacy gains. Pipeline programs are often judged by such outcomes, and many have shown success. For example, data from SHPEP (formerly SMDEP) historically showed a significant proportion of alumni go on to health professional schools [24]. Specifically, one report noted ~70% of SHPEP alumni who applied to med school matriculated [24]. If HUIPP can approach similar figures, that's a clear impact. Even within the 2-year grant, we can measure intermediate outcomes: **knowledge gains** (via pre/post exams in core science topics), **attitudinal shifts** (e.g. using something like the SHPEP Career Barriers Survey to see if perceived barriers drop as in the JAMA study [23]), and **intentions to apply**. A strength of this KPI is it emphasizes **interprofessional and cultural humility components** – aspects that are innovative and could produce insights. For instance, measuring students' understanding of other health professions before and after could be a novel contribution (interprofessional socialization outcomes). The KPI can be aligned with **benchmark practices**: many similar programs track not only admission rates but also things like GPA improvement, or retention in the academic pipeline (do participants persist in their STEM majors). Because HUIPP is explicitly about disadvantaged students, an equity-focused metric could be "% of participants from lower-income or first-gen backgrounds who improve their academic standing or get accepted to a program" – demonstrating closing of gaps. Another strength: given the national climate (affirmative action bans, etc.), documenting the success of such a program can be powerful evidence for policymakers (this is something HUCM can publish or present to show "alternative" ways to diversify the pipeline in a race-neutral but equity-conscious manner). In short, this KPI has the potential to **shape future interventions** (if some elements are particularly effective, they can be expanded) and to contribute to scholarly literature on what works in pipeline diversity efforts.

Weaknesses: One immediate weakness is **timing**. HUIPP is a new program and may not fully launch until mid-grant (the proposal timeline indicated Year 2 start) [30] [31]. That means by the end of the grant, long-term outcomes (like admissions) might not yet be observable. The KPI must then rely on short-term proxies (test scores, surveys), which are good but not the ultimate goal. There's a risk that if those proxies aren't well-defined, we default to counting participants and calling it a day. Another challenge is ensuring **comparative evaluation**: to rigorously say HUIPP "works," one might compare participants' outcomes to similar students who didn't attend (if data available) or national averages. Without comparison, improvements might be due to general maturation or other support the students have. It might be beyond scope to get a control group, but it's a consideration if aiming for publishable rigor. Additionally, **feasibility of long-term tracking**: ideally we'd track how many HUIPP alumni enter med/dentistry etc. This requires data-sharing or self-reports after the program – feasible, but only if resources are devoted to follow-up

(could be a weakness if not planned, as many programs lose track of alumni). Another possible weakness: focusing on numbers could overshadow the **quality of student experience**. For example, if we only KPI the number 24 (filled seats) and maybe an average test score gain, we might miss nuances like: Did the students find the interprofessional aspect useful? Did they feel a sense of belonging in medicine after the program? It's important because **retention in the pathway** often depends on qualitative factors like mentorship and belonging. If not captured, we might falsely conclude success just because they completed the program. Also, HUIPP being multi-disciplinary is a strength, but it might complicate metrics – success might look different for pre-nursing vs pre-med (e.g. nursing students might enter the workforce faster, med students have a longer path). A single KPI might not distinguish these trajectories. Lastly, resource sustainability: SHPEP was externally funded; HUIPP after RWJF will need continued support. If the KPI doesn't account for that (like securing institutional funding going forward), we could achieve short-term success but lose momentum post-grant.

Refinements: To maximize KPI 5's value:

- **Multi-dimensional evaluation:** Define a set of success metrics for HUIPP participants: e.g. (a) **Academic improvement** – measure increase in test scores or GPA in key subjects after program; (b) **Application readiness** – % who take next steps (MCAT, etc.) within a year; (c) **Confidence and reduced barriers** – use a survey like the **SHPEP perceived barriers/motivators scale** to quantify changes [23] [26]. These should be measured for each cohort and reported.
- **Compare to benchmarks:** If possible, compare HUIPP outcomes to past SHPEP data or national data. For instance, "X% of HUIPP scholars applied to med school within 2 years" versus the known ~65% of SHPEP scholars who applied historically [24]. If HUIPP can match or exceed that, it's a compelling result. If not, that insight can drive program adjustments (maybe more MCAT coaching is needed, etc.).
- **Participant diversity and equity:** Track the demographics of HUIPP scholars (race/ethnicity, first-gen status, low-income status) and ensure the **impact is equitable across these groups**. For example, did all subgroups show similar score improvements? If not, refine the curriculum to support the ones who lagged. Also, ensure gender diversity in each track and monitor that (some pathways like nursing might skew female; aim to include underrepresented genders in each field).
- **Alumni tracking plan:** Establish an alumni database or follow-up survey at 1, 2, 5-year intervals. Even if outside the 2-year grant window, set the mechanism now (perhaps incentivize alumni updates with networking or continued mentoring). This way, KPI can eventually include "% of HUIPP alumni who matriculate into a health professional school within X years." That is the ultimate impact measure and crucial for sustainability arguments.
- **Publishable assessment:** Consider involving education researchers to design the HUIPP evaluation. A robust mixed-methods assessment (quantitative pre/post and qualitative interviews) could be written up for a journal in medical education or diversity in higher ed. The act of planning for that will inherently strengthen the KPI – because you'll collect better data.
- **Sustainability metric:** In addition to participant outcomes, track institutional commitment: e.g. "$ of internal funds or new grants secured to continue HUIPP beyond RWJF funding." This indicates whether the program's impact is convincing enough to garner ongoing support (a key aspect of long-term success).

By refining KPI 5 to include **outcome evaluation and future tracking**, we ensure HUIPP isn't just implemented but is continually learning and proving itself. This will shape future iterations of the program and contribute knowledge on preparing URM students for health careers in an interprofessional, holistic way.

KPI 6 (Aim 4a): Student Food Pantry and Emergency Financial Aid Usage & Impact

Description: *Provide resources to reduce socioeconomic hardships among medical students.* This includes a **stocked Food Pantry** accessible to students and an **emergency fund** (up to $5,000 grants) for those facing crises like housing instability [32] [33]. **Proposed measures:** Number of students utilizing the food pantry; amount of food distributed; number of emergency grants given and total $ disbursed; possibly changes in student-reported food insecurity levels or reduction in leaves/attrition due to financial hardship.

Score: 8/10. Alignment: High – fits Aim 4's objective to retain at-risk students by alleviating basic-needs insecurity. It addresses a known predictor of attrition (food insecurity) head-on. **Actionability:** Moderate/ High – usage data will show demand and can guide resource allocation (e.g. if only few use pantry, increase awareness; if many use it, secure more funding). If tracked, changes in food insecurity or stress levels can inform student support services. **Feasibility:** High for output metrics (it's easy to log pantry visits, track grant disbursements). Moderate for outcome metrics – surveying students about food security or tracking attrition causes requires additional effort and privacy considerations. **Rigor/Insight:** Moderate – usage statistics alone demonstrate reach but not necessarily impact on academic outcomes. However, correlating usage with student success/retention would provide strong insight. There is growing literature on student food insecurity in higher ed that could be leveraged for rigorous analysis (e.g. comparing HUCM's rates to national surveys).

Strengths: This KPI tackles a fundamental but often hidden issue. **Socioeconomic hardships (food and housing insecurity) are strongly linked to student distress and attrition** [34] [35]. In fact, one AMA report noted that when medical students drop out, it's frequently due to personal/life issues like finances rather than academic failure [34]. By addressing this, HUCM is targeting a lever that could improve retention and student well-being in a very tangible way. A strength of the KPI is its **immediacy and clarity**: if X students come to the pantry, that's an immediate output showing unmet needs are being met. If Y emergency grants avert students from taking leave, that's a clear success story. Tracking usage can also highlight **seasonal or class-year trends** (maybe spikes before exams or among first-years), which can inform when/how to intervene. Another strength: the KPI inherently promotes **equity** – students from low-income backgrounds benefit most, narrowing the gap in hidden hunger between them and their more affluent peers. Literature suggests financial support **differentially aids retention for lower-income students** [35], so we'd expect to see those who use these resources stay on track. An immediate measurable outcome could be **reduced stress**: perhaps use a validated stress or food security questionnaire (e.g. USDA six-item food security scale) before and after providing support. If the KPI can show a drop in the proportion of students who are food insecure (say from 20% to 5%) or an improvement in mental well-being among aid recipients, that's a compelling impact. There's precedent for measuring this – studies have found around 20% of medical students experience food insecurity [36], which is alarmingly high. HUCM could aim to reduce that percentage and cite it as a success. Additionally, this KPI might yield insights for broader policy: for example, if data show that relatively small emergency grants have outsized effects (preventing dropout), it could be a model for other institutions or support seeking additional funding (publishable as a program report or presented to the AAMC etc.). It also shows sustainability in a way – by keeping students enrolled and healthy, it ensures those future physicians make it to graduation, which is the ultimate goal of retention efforts.

Weaknesses: One challenge is **stigma and under-utilization**. Students may be reluctant to use a food pantry due to pride or fear of being judged. If the KPI is just "number of students using pantry," a low number might misleadingly suggest lack of need, when in fact need exists but students aren't coming forward. That could result in false complacency. Conversely, a high number is good to show usage, but one must question if it represents **increased need or increased awareness**. Interpretation requires context. Another weakness: **connecting to outcomes**. We ideally want to know if providing these supports actually prevented attrition or improved academic performance. Proving that causal link in a short time is hard. Attrition in med school is relatively low (nationally ~3-5%), so HUCM might only have a handful of dropouts typically. We'd need to see if that number changes or if none of the supported students leave. With small Ns, the KPI might not detect a "signal" even if the program helped (e.g. maybe previously 3 students would have left, now 0 left – great outcome, but with such small numbers it may not be statistically significant). Also, students who need emergency funds might have other compounding issues; financial help alone might not solve all their challenges, so some may still struggle academically or emotionally. Thus, measuring success might require holistic data (which could be outside KPI scope). There's also the **issue of confidentiality** – tracking exactly who uses these services and then their outcomes could be sensitive; it must be done carefully and likely in aggregate. Feasibility-wise, while counting pantry usage is easy, measuring food insecurity rates would require surveys that students might not consistently fill out. Another subtle point: if the KPI focuses just on utilization, it might incentivize maximizing numbers served, potentially depleting resources or giving aid when not absolutely necessary (though in practice students self-select when in need). The program might also inadvertently miss some students (e.g. those too ashamed to come) – the KPI wouldn't capture unmet need unless we actively seek it via surveys. Finally, to sustain this beyond the grant, HUCM will need continued funding for pantry supplies and emergency grants. The KPI doesn't inherently measure whether the **infrastructure is institutionalized** (e.g. will the college continue funding this line item?). If not tracked, there's a risk the support ends when grant ends, which would undercut long-term impact.

Refinements: To bolster KPI 6:

- **Measure prevalence of need as well as usage:** Conduct an anonymous survey or include questions in an existing student well-being survey about food insecurity and financial strain (yearly). Track the percentage of students reporting food insecurity before and after the intervention roll-out. The goal would be to **see a decrease in unmet needs**. For example, if baseline 20% of students were food insecure [36], aim to reduce that to <10%. Even if students won't self-identify at the pantry, a drop in reported insecurity suggests impact.
- **Correlate with retention/performance:** While numbers are small, track whether students who received emergency grants or were heavy pantry users were able to stay enrolled and pass their courses, versus any who did not get help and had to take leave or withdraw. Present this qualitatively if needed (e.g. "Out of 10 students who received emergency funds, all 10 remained in school; meanwhile, 2 peers who did not receive aid and faced hardships took leave"). Such case-based evidence [34] can be powerful to demonstrate that the support likely prevented attrition.
- **Student feedback:** Obtain feedback from beneficiaries (voluntarily) on the impact – e.g. a short questionnaire: *"Did accessing this resource help you continue your studies?"* or *"How did this support affect your stress levels?"*. If, for instance, 90% say it reduced stress and allowed them to focus on school, that's a valuable outcome indicator, aligning with findings that alleviating financial stress improves mental health and academic performance [37].
- **Normalize and publicize the support:** As part of the KPI, track outreach efforts – e.g. number of communications or orientation sessions informing students of the pantry/funds. Ensuring high

awareness is key to utilization. If utilization is low, that triggers an action (improve publicity or reduce stigma). Possibly measure "% of students who know about the pantry (via survey)" as a metric.

- **Expand the metric of success:** Consider academic or wellness outcomes: e.g. compare average exam scores or progression rates of students before and after the program's implementation (though many factors influence these, a steady/improved academic performance especially among at-risk students could be an indirect sign of reduced hardship impact).
- **Plan for sustainability:** Track sources of funding/in-kind donations for the pantry beyond the grant. A metric could be "secured partnerships or funding to sustain the pantry for X years." If local organizations donate food or if the university commits funds annually, note that. This reflects on sustainability – the KPI isn't just usage, but ensuring the resource continues to meet future cohorts' needs.

By broadening KPI 6 to include **need prevalence and outcome correlation**, HUCM can better demonstrate that providing essential needs support leads to improved retention and student success – not just that the support was used. This addresses the "so what" question and can yield evidence to justify making these supports permanent (e.g. data showing scholarships/emergency aid **significantly improve retention for low-income students** [35] will bolster institutional investment).

KPI 7 (Aim 4b): Research Equity Fund – Student Publications and Presentations Supported

Description: *Establish a fund to cover journal fees and conference travel for students, promoting research engagement.* Up to **15 students/year** will be funded to publish in open-access journals or present at national conferences, addressing financial barriers to scholarly productivity [38]. **Proposed measures:** Number of students who receive publishing/travel grants; number of conference presentations delivered; number of manuscripts published by supported students; perhaps subsequent academic outcomes (e.g. residency match or awards involving those students).

Score: 7.5/10. Alignment: High – this supports Aim 4's broader goal of enhancing scholarship among students and leveling the playing field (students who lack funds for research dissemination get support). It indirectly aids retention and career advancement, aligning with the mission to cultivate competitive, accomplished graduates. **Actionability:** Moderate – counting how many students benefited and their outputs (papers, posters) is useful; if uptake is low, outreach can be increased, or criteria adjusted. If certain types of students aren't utilizing it (e.g. only PhD students, few medical students), that could inform adjustments. However, the true career impact (like better match rates or more staying in academia) will be longer-term and less immediately actionable. **Feasibility:** High – it's easy to track the fund disbursements and require students to report resulting presentations/publications. Data on those outputs are straightforward (CV items, etc.). **Rigor/Insight:** Moderate – as an isolated KPI, it's mostly an output count (how many papers/presentations got funded). With additional context, it could be insightful (e.g. comparing research output before vs after fund implementation, or surveying whether students would have been unable to present/publish without the fund). There is literature on student research experiences linking to career success (e.g. research involvement correlates with matching to competitive residencies and academic careers), so evaluating this could be tied into known benchmarks.

Strengths: This KPI directly tackles an **equity issue in academic development**: students with personal funds or grants can travel to conferences and publish papers, whereas those without support might not, which can widen achievement gaps. By funding these activities, HUCM may increase the number of

students who graduate with presentations and publications on their CV, which is advantageous for residency or further training [38]. A strength is that it's a relatively small investment per student with potentially high yield – one publication or national presentation can significantly boost a student's profile. Tracking the **number of publications and conference presentations** is a clear metric of scholarly output. For example, if pre-grant only 5 students presented at conferences yearly and now 15 do, that's a tangible improvement. The KPI also encourages a **culture of research**: students see that their work is valued and supported, possibly motivating others to engage in research. Over time, one might measure if overall student research engagement rises (e.g. more students submitting abstracts). From a benchmark perspective, many med schools have student research programs, but fewer provide designated funds for publications/travel – HUCM's effort could set a precedent. Literature (like the Ginther et al. 2011 reference in the proposal) underscores that early research productivity is linked to career advancement [38]. Also, publications by students can shine a positive light on the institution (more studies coming out of HUCM). The KPI's data could be used to demonstrate how a modest grant program led to X abstracts and Y papers – a story that could be published in an education journal or used to garner further funding (maybe an internal budget for it after RWJF). Additionally, supporting conference travel has immeasurable benefits like networking and mentorship for those students; while hard to quantify, one could gather testimonials. In terms of sustainability, once success is shown (e.g. students supported by the fund have higher match rates or win awards), it builds the case to keep it going.

Weaknesses: A limitation is that this KPI focuses on **immediate outputs (papers, posters)** but not necessarily the quality or impact of those outputs. For instance, funding a student to submit to an open-access journal ensures a publication, but the measure doesn't distinguish a low-impact predatory journal from a rigorous one. There's a slight risk that students might aim for easier publication venues just to utilize the fund, which could be a "checkbox" outcome. However, faculty mentorship can mitigate that. Another issue: success might depend on students actually conducting research worth presenting/publishing – which relies on mentorship and opportunities upstream. If relatively few students engage in research, the fund might be underutilized. It might then look like a failure ("only 5 students used out of capacity 15"), but the root cause would be earlier in the pipeline (lack of research projects or encouragement). Thus, interpreting the KPI requires looking at the whole research ecosystem for students. Additionally, **attribution to long-term outcomes** is tricky. We assume these scholarly outputs help with residency placement or further education – and indeed, research involvement is often considered in competitive residencies. But proving that the funded presentations caused better match outcomes would be difficult due to many confounding factors. We might not be able to see a clear numerical impact on, say, match rates or board scores due to this intervention alone. The timeline of realizing career impact is beyond the grant. Also, focusing on numbers of presentations could incentivize quantity over meaningful experiences – e.g. a student might present the same poster at two conferences (counting as two outputs) whereas another does a high-quality oral presentation at one; the KPI counting might not value the latter appropriately. Lastly, there is the **issue of selection bias**: typically, the students who are proactive in research might be the ones to take advantage of this fund. Those not already inclined or lacking a mentor might still not benefit. If the KPI doesn't consider that, we might overestimate the reach. We should ensure equitable awareness and access (e.g. do URM and first-gen med students use the fund at similar rates as others? Or are there disparities in who's doing research in the first place?). If not addressed, the fund could inadvertently mostly benefit those who already have advantages (like being in a research lab), though the intent is to help disadvantaged students.

Refinements: To strengthen KPI 7:

- **Distinguish types of output:** Track not just the count of publications/presentations, but also their nature. For instance, note how many were at national conferences vs local, how many in peer-reviewed journals, any that won awards, etc. This provides a sense of quality/impact. A possible metric: "Number of national conference presentations by students (baseline X, target Y)" since national exposure is particularly valuable.
- **Track participant demographics and prior involvement:** Ensure the fund is reaching the intended students. Monitor the characteristics of students funded – e.g. proportion who are URM, female, first-gen, etc., compared to overall class composition. If certain groups are underrepresented in fund usage, that indicates a need to promote it or mentor those groups more into research. The KPI could then include an equity aim like "50% of awardees each year are from URM or disadvantaged backgrounds," aligning with the program's equity goals.
- **Pre/post comparison:** Compare the research productivity metrics before and during the program. For example, use the graduating class of 2025 (no fund) vs 2026 (with fund) and compare how many had at least one publication/presentation. An increase would suggest the fund (and related research support) made a difference. If possible, compare HUCM's rate to national averages (AAMC might have data on % of med grads with research experiences).
- **Link to downstream outcomes (qualitatively):** Keep records if those funded students report any notable successes: Did their conference presentation lead to a collaboration or residency interview? Did a publication help them win an award or distinction? These stories, even anecdotal, enrich the quantitative KPI. Perhaps include a follow-up survey for funded students asking how the funding affected them (e.g. "Would you have been able to present/publish without this fund? Y/N"). If 80% say "No, I wouldn't have afforded it," that quantifies impact in a different way – the program directly enabled opportunities that otherwise would be missed.
- **Encourage faculty mentorship tracking:** Maybe measure "number of faculty mentors who had students supported by the fund." This shines light on whether the grant is encouraging more faculty-student research collaborations. If that number grows, it means an institutional culture shift (more faculty engaging students in projects because they know support is available to disseminate).
- **Sustainability plan:** The KPI could include seeking additional sources (like an endowed fund for student research or incorporation into the school budget). For instance, metric: "Establish at least one endowed award or annual budget line for student research travel by Year 3." This would show that the benefit will continue past the initial grant.

Overall, making KPI 7 not only count supported outputs but also **evaluate their significance and who benefits** will ensure it truly advances equity in scholarly development. By demonstrating that previously under-supported students are now getting research credentials (and possibly showing early career benefits), HUCM can justify this as a permanent program. It also provides a narrative for publication: "Providing $X in targeted micro-grants led to Y% increase in student publications and improved confidence in research," contributing to the knowledge on supporting URM trainees in research.

KPI 8 (Aim 5A): Implicit Bias Training for Faculty Search/Promotion Committees and Fair Promotion Outcomes

Description: *Implement mandatory training for all department chairs and members of Appointment, Promotion, and Tenure (APT) committees on implicit bias and respectful, fair evaluation practices* [39] . The goal is to promote equity in faculty promotion and recruitment processes. **Proposed measures:** Number (and % coverage) of

leaders/committee members trained; perhaps a pre/post assessment of their bias awareness; and **longer-term**: monitoring promotion rates or time-to-promotion of URM faculty before vs after intervention as an equity outcome.

Score: 6.5/10. Alignment: Medium/High – it aligns with Aim 5's goal of retaining diverse faculty by addressing one root issue (bias in advancement). However, it's one piece of a larger puzzle. **Actionability:** Moderate – tracking completion of training is actionable (if some committees haven't done it, mandate it; if new members join, train them). But the more meaningful action would come from monitoring promotion outcomes (if disparities persist, further reforms needed). The KPI as typically framed (just training completion) doesn't automatically lead to action beyond "train more." **Feasibility:** High for the training count (simple to record who attended). Feasible but more complex for outcome measures – analyzing promotion data by demographics requires collecting baseline and follow-up over years, and numbers may be small. **Rigor/Insight:** Low/Moderate – just doing training is the kind of box-checking that often doesn't yield new insights (and literature is lukewarm on one-off bias training efficacy [5]). However, if coupled with analyzing promotion trends, it could produce valuable knowledge on whether this intervention correlates with improved equity (that would be insightful, but requires longer observation).

Strengths: The KPI ensures **institutional accountability** in a sensitive area. By mandating and tracking 100% completion of bias training for decision-makers, HUCM is at least taking concrete steps to mitigate bias in promotions/hiring. That sends a strong message organizationally and externally (which could be worth reporting on its own, given the current anti-DEI climate – it shows HUCM doubling down on equity). In terms of alignment, this KPI can directly tie to outcomes like **promotion rates of URM faculty** – a key metric of equity and success. If done properly, the ultimate success would be seeing a narrowing of any promotion gap. For example, if previously URM faculty were getting promoted at lower rates or taking longer, after interventions one would hope to see improvement (this could be benchmarked against AAMC data if available). A big strength is that **addressing bias in evaluation is evidence-based** – research has documented biases in faculty advancement (e.g. women and URM faculty often face unintentional biases in evaluation letters, committee discussions, etc.). By training committees, HUCM follows recommended practices to reduce such biases [40] [41]. Also, as the proposal cites, there's data that leadership development reduces attrition [42], and part of leadership development is having fair promotion practices. Another strength: it's relatively low-cost and **scalable** – once a training module is developed, it can be reused for new members, etc. The KPI could also encompass *policy changes* as a result of training (for instance, some institutions implement structured review criteria or rubrics after recognizing bias). Tracking whether any new promotion policies or criteria emerged from these discussions would show institutionalization. Additionally, doing this training might improve the climate – faculty seeing that promotion committees are trained could increase trust in the process (maybe measured via faculty surveys).

Weaknesses: The elephant in the room is that **implicit bias training alone has not proven to magically eliminate bias or disparities**. Studies in healthcare and other fields show mixed results; some interventions raise awareness but don't necessarily change behavior or outcomes [5] [43]. There's even risk of complacency ("we did training, problem solved") or backlash. So, a KPI that stops at "everyone trained" might lead to a false sense of accomplishment. The real desired outcome – fair promotions – might not automatically follow. Another weakness is **measuring the outcome** in a meaningful time frame. Faculty promotion cycles are long. For example, if junior faculty take ~7 years to go up for promotion, seeing an increase in URM promotion rate due to training could take years to manifest. Within the 2-year grant, we might not detect a change, especially if few promotions happen annually in a small college. So this KPI could end up just being "we trained X people" without evidence of effect in the short term. Also, it's a

challenge to quantify "respectful discussions" or unbiased behavior on committees. Short of observing committees or analyzing letters (which is difficult to do), we rely on surrogate measures. One possible measure is faculty satisfaction with the promotion process (from climate survey). That could be included, but isolating the impact of training vs other factors is tricky. Another issue: coverage – if any key people skip or don't take it seriously, the effect may be diluted. The KPI likely ensures compliance, but not engagement level. Committee culture might need more than a one-time workshop; it might need ongoing facilitation or policy enforcement (like requiring diverse promotion committees, etc., which could be additional metrics). Without those, the KPI might be well-intended but not sufficient. Finally, a subtle weakness from an insight perspective: if we do see a change (say promotion of URM faculty improves), the KPI as written won't tell us *why* – was it the training? Or was it other simultaneous efforts (like mentorship, mini-grants for faculty research, etc.)? It might be the combination that works. So attributing causality to this one KPI will be speculative.

Refinements: We should augment KPI 8 in the following ways:

- **Track promotion outcomes explicitly:** Establish a metric like "Promotion rate of URM faculty (or women faculty) before vs after intervention" or "Average time to promotion for URM vs non-URM faculty." Even if the time frame is longer, start gathering baseline data now. This aligns the training with the intended outcome. For instance, if previously 50% of URM faculty were promoted on first try versus 80% of others (hypothetical data), aim to close that gap over a few cycles. Even if not achieved in 2 years, having this KPI drives continued effort and accountability.
- **Process changes:** In addition to training, measure any process improvements: e.g. "All promotion committees now use a standardized evaluation rubric to reduce subjectivity" or "Implemented requirement that at least one external bias observer sits in high-level promotion discussions" (some institutions do this). These are structural metrics that indicate the training was translated into action. We could set a goal like "100% of departments adopt at least one new best practice in bias mitigation in evaluations."
- **Follow-up assessment:** After training, do a follow-up quiz or scenario test for participants to see if they apply the concepts. Or, survey them about changes in their behavior (e.g. "Did the training change how you evaluate CVs or letters?"). If say 90% report increased awareness and use of structured criteria, that's a positive intermediate outcome. It's also publishable – contributing to the scant evidence on effectiveness of such training.
- **Faculty perception:** Use the faculty climate survey to ask URM faculty, "Do you feel the promotion process is equitable?" Track that over time. An increase in positive responses post-intervention would be a strong indicator of impact. (If it doesn't change, then the intervention may need to be strengthened.)
- **Repeat and reinforce:** Implicit bias work is not one-and-done. The KPI could include that committees will have refreshers or continued conversations each year. You might measure "number of follow-up discussions on equity in promotion held per year." This indicates a shift toward an ongoing culture change rather than a single checkbox.
- **Accountability:** Ultimately, tying this to outcomes means if promotion disparities persist, leadership must take further action. Ensure the KPI reporting includes an analysis of promotion outcomes by demographic with recommendations. If the data show, e.g., women faculty still lag in advancement, then next steps could be implemented (like revamping criteria, adding mentorship in the promotion process, etc.). So the KPI could evolve: Year 1 focus on training; Year 2 report on data and introduce additional measures if needed.

In summary, KPI 8 should not end at "completed training" but extend to **monitoring and improving promotion equity**, which is the true measure of success. This two-tier approach (short-term training metric, longer-term equity outcomes) will make the effort more than symbolic and will provide evidence whether this approach yields the desired change (useful for the broader academic community interested in faculty diversity and equity). Notably, bias training combined with clear metrics and targeted outcomes is recommended by experts to ensure it leads to real changes [44] [45].

KPI 9 (Aim 5B): Faculty Mini-Grants for Disparities Research – Uptake and Scholarly Outcomes

Description: *Offer small grants (up to $15k) to faculty for pilot projects on health disparities or innovative scholarship, to re-engage post-tenure faculty in research* [46] [47]. The intent is to spark interdisciplinary work, generate preliminary data for larger grants, and keep faculty intellectually stimulated, thereby improving retention. **Proposed measures:** Number of mini-grants awarded; number of faculty recipients (especially mid-career/post-tenure) who participate; and outcomes from these grants – e.g. abstracts, publications, new grant applications, or cross-department collaborations initiated.

Score: 7/10. Alignment: High – this addresses Aim 5's faculty retention through support and aligns with the identified problem that post-tenure faculty often lose research momentum due to other duties [48]. Providing funding directly tackles that barrier. **Actionability:** Moderate – awarding X grants is directly actionable (if few apply, do more outreach; if many apply, seek more funding). The outcomes (publications, etc.) will inform whether to continue/expand the program. **Feasibility:** High – tracking grants given and any resulting scholarly products is straightforward (require grant recipients to report outputs). Getting data on whether this affects retention might be feasible qualitatively (feedback from faculty) but quantitatively proving retention impact may be hard within a short time. **Rigor/Insight:** Moderate – as an intervention, it's something many institutions do (internal pilot grants), and some have evaluated their ROI in terms of subsequent external funding. This KPI could yield insights if we track how many larger grants or sustained projects come out of it. However, given the small scale, data might be anecdotal unless aggregated over several years.

Strengths: The KPI promotes a **culture of research and innovation** at a relatively low cost. By funding, say, 5 mini-grants per year, HUCM encourages faculty to pursue new ideas. A big strength is its potential for a **multiplier effect**: A $15k pilot could lead to a $100k+ external grant or a high-impact publication. Tracking that ROI would be compelling – for example, if even one mini-grant leads to an NIH or foundation grant, that's a strong return. Many CTSA hubs and universities track pilot grants and have found positive returns (often reporting that every $1 of internal funding yields several dollars in external grants) [49] [50]. If HUCM's KPI can capture similar data, it provides justification to sustain or increase such internal grants. Another strength: it targets **mid-career faculty who might otherwise disengage**, thereby potentially improving retention and job satisfaction. A survey of faculty who received such grants could show improved morale or renewed scholarly identity, which is key in retention. Also, the interdisciplinary nature can break silos – measuring how many different departments collaborated as a result is another interesting metric (e.g. "formed 3 new cross-department research teams"). The KPI inherently fosters **scholarly output** – counting publications or conference presentations resulting from the mini-grants will contribute to HUCM's academic reputation and could be publishable data in an education or institutional research context (showcasing a model for faculty development). Moreover, involving faculty in disparities research ties back to the mission of health equity; it might indirectly benefit students and the community as well. It's also a fairly **feasible**

retention strategy: Dedicating a portion of funds to keep faculty engaged academically addresses one known reason faculty leave (lack of support for research interests). If retention is qualitatively linked to these grants (e.g. a faculty member says "this mini-grant made me stay at HU instead of looking elsewhere"), that's golden anecdotal evidence. On a benchmark note, the AAMC or others have recommended post-tenure support to maintain research vitality; HUCM doing this is in line with best practices in faculty development.

Weaknesses: One issue is that in a short grant period, outcomes might be limited – research often takes time. A faculty might get a mini-grant and only start collecting data within a year; publications or external grants might come 2+ years later. If the KPI is evaluated too soon, it may show "5 grants given, 0 publications yet" which undervalues the eventual impact. Also, the **sample size** is small – only a handful of faculty get these grants. So drawing broad conclusions (like effect on overall faculty retention) will be difficult statistically. It might boil down to success stories rather than numbers. Another weakness: we must ensure the grants are used effectively. If not paired with accountability (like requiring an abstract/paper submission), some projects might fizzle (faculty are busy; a mini-grant could potentially end up unused or with minimal progress if not well supported). Thus, the KPI should include **monitoring project progress**, not just awarding money. Additionally, there's a possibility of **selection bias** – the most active or ambitious faculty will apply, who might be less likely to leave anyway. Those feeling completely burned out might not even apply for a grant. So the program might not reach every faculty at risk of attrition. If the KPI only measures outputs from grantees, it might miss that some faculty still remain disengaged. There's also the matter of **interdisciplinary requirement**: The proposal emphasizes interdisciplinary research for these grants [47]. That's great, but it may narrow the pool of projects (not every worthwhile project is interdisciplinary). If that's strictly enforced, some faculty might not apply, affecting uptake. However, if it encourages new collaborations, that's a plus (just need to ensure we measure it). Lastly, attributing retention to this specific program is complex – retention can be influenced by many factors (salary, family, environment). We likely won't have enough data points to say the mini-grants reduced faculty turnover by X%. We might rely on qualitative feedback or at best note if none of the grant recipients left the institution over a certain time.

Refinements: To improve KPI 9:

- **Require and track tangible outputs:** Make it part of the mini-grant conditions that within a year, recipients report outcomes such as *manuscript submitted, conference abstract submitted, larger grant proposal submitted*. Then measure the rate of those outcomes (e.g. "80% of Year-1 mini-grant recipients submitted an abstract or grant proposal by Year-2"). This shifts focus to results, not just funding given.
- **Longer-term tracking for ROI:** Even beyond the grant period, plan to follow what comes of these projects. Set a metric like "By 2 years post-award, each mini-grant yields at least one of: external grant, publication, or implementation of a new program/policy." Then at the end of grant, we can at least report early indicators (e.g. 3 external grant submissions in process, etc.).
- **Faculty feedback on retention/engagement:** Survey or interview the grant recipients about how this affected them. Questions could include: *"Did this opportunity increase your commitment to staying at HUCM?"*, *"Did it stimulate new ideas or collaborations for you?"*. If, say, a majority indicate it positively impacted their job satisfaction, that's an important outcome (even if indirectly measured). It aligns with evidence that feeling supported in scholarship is key to faculty morale [8].
- **Uptake and reach:** Monitor application numbers and who is applying. If only a small subset is applying, investigate why (lack of awareness? requirements too strict?). Aim for a metric like "at least

50% of eligible departments have faculty who apply for mini-grants each cycle," indicating broad engagement. If certain groups (e.g. women or URM faculty) are not well-represented among applicants, do targeted outreach – we can include a goal to ensure diversity among awardees (similar to student fund, ensuring equity in who benefits).

- **Integrate with mentorship and development:** Encourage or require that junior faculty co-lead or are involved in these projects. This can multiply impact (helping junior faculty build track records). A metric could be "# of mini-grant projects that involve a junior or URM co-investigator." This ties Aim 1b (mentorship) with Aim 5b (scholarship), and provides an additional benefit to track.
- **Public recognition:** As a sustainability measure, track whether the institution starts to institutionalize this (e.g. creates an annual Research Day where these mini-grant results are showcased, or secures additional internal funds). If HUCM leadership sees value, they might continue funding beyond RWJF. A possible KPI extension: "Establish an annual HUCM Health Equity Research Symposium featuring mini-grant projects," which can raise the program's profile and likelihood of continuation.

By refining KPI 9 to emphasize **outcomes and faculty experience**, we ensure it's not just dollars handed out but rather a catalyst for ongoing scholarly activity. Over time, the combination of metrics (outputs, subsequent grants, qualitative satisfaction) will tell a story of whether these mini-grants moved the needle on faculty engagement and retention. If successful, HUCM could document that mini-grants plus mentorship and bias training together contributed to a more productive and satisfied faculty (which is a great narrative for internal stakeholders and external funders alike).

KPI 10 (Aim 5C): Faculty Wellness and Leadership Development Participation and Retention Impact

Description: *Implement faculty well-being programming and offer leadership development opportunities to enhance faculty satisfaction and reduce burnout.* This involves things like mindfulness retreats, peer support circles, and an annual leadership development program for ~20 faculty [51]. The proposal cites data that such investments can reduce attrition by ~20% [42]. **Proposed measures:** Number of well-being events held and faculty attending; number of faculty completing a leadership development activity; and potentially changes in faculty burnout/satisfaction survey scores; faculty retention/turnover rates year-over-year.

Score: 7/10. Alignment: High – aligns with Aim 5's emphasis on holistic support for retaining faculty. Academic medicine burnout is well-documented; addressing it is crucial to keep faculty from leaving. **Actionability:** Moderate – tracking participation in wellness and leadership programs is actionable (if few attend, adjust timing/content; if popular, expand offerings). Monitoring faculty satisfaction or burnout scores can flag issues needing response. However, linking to actual attrition data in short term is less actionable due to small numbers (trends might take time). **Feasibility:** High for counting activities and attendees. Moderate for measuring outcomes like burnout level – requires survey tools (e.g. Maslach Burnout Inventory or others) and faculty willingness to report honestly. Also, external factors (like pandemic, institutional changes) influence these metrics, so isolating the program's effect is hard. **Rigor/ Insight:** Moderate – Wellness programs' impacts can be somewhat subjective, but there is evidence in other sectors that wellness initiatives correlate with better retention (one survey found institutions with proactive wellness saw 22% lower staff turnover [52]). If HUCM can capture something similar (even qualitatively: "faculty who engaged in wellness are more likely to stay"), that would be insightful. Leadership program outcomes can be measured (promotions of graduates, etc.), which can be rigorously tracked over time.

Strengths: This KPI focuses on the **human factor** of retention: improving faculty's work-life quality and growth opportunities. It acknowledges that beyond tangible supports, feeling valued, balanced, and able to grow as a leader are key to retaining talent. One strength is that participation is an immediate indicator – e.g. if 20 faculty undergo leadership training, that's 20 people directly touched. If combined with other data (like those 20 have a lower turnover rate than others), it's compelling. The mention in the proposal that such efforts can reduce attrition by 20% [42] likely refers to some study (perhaps at AAMC or institution that saw attrition drop after leadership programs). Indeed, a study at one health center showed leadership-trained faculty had an attrition of 3.6% vs 5.3% overall [13] – a relative reduction of ~32%, supporting the idea. By having this KPI, HUCM can test if their experience matches that benchmark. Another strength: **faculty well-being is increasingly recognized as critical** (especially post-COVID). If HUCM measures burnout or satisfaction via a climate survey or the AAMC StandPoint survey, improvements can be touted. For example, "faculty agreement with 'I feel valued by the institution' rose from 60% to 75% after implementing wellness initiatives" would be a strong outcome. The KPI's inclusion of **leadership development** is strategic: offering 20 faculty a leadership course or coaching not only aids those individuals' career progression (perhaps leading to promotions, which can be tracked), but also signals to all faculty that the college invests in their advancement. This can boost morale broadly. Tracking how many take up leadership opportunities and any subsequent leadership roles or promotions they achieve is a concrete measure. Another potential measure is internal promotions vs external departures: maybe an increase in internal promotions (because people are prepared and want to stay) and a decrease in people leaving for outside leadership jobs. Finally, these programs can yield **peer support networks** and a sense of community, which could be captured qualitatively. For instance, testimonies like "The mindfulness retreat helped me cope with stress and I'm now less likely to consider leaving" – while anecdotal, combined with other data, builds a story that the KPI interventions are working.

Weaknesses: Well-being and leadership development benefits can be **hard to quantify**, and improvements may be due to many factors. For instance, a dip in burnout might be due to lighter clinical load or other administrative changes, not just the wellness program. So showing a direct line from program to retention is challenging. Also, not all faculty may engage – those most in need (burned out, cynical) might skip wellness events. So a KPI of "number of attendees" could look modest and not reflect need. If only a small fraction attend a mindfulness workshop, does that mean it failed or just that it reached a niche? Interpretation requires caution. There's also a risk of *culture skepticism* – some faculty may not buy into wellness activities (seeing them as fluff) unless leadership strongly endorses. The KPI might need to measure culture change (like attitude shifts about well-being) which is tough. Another issue: **leadership development selection bias** – often the high achievers or those already on upward trajectory join such programs, and likely they'd stay or advance anyway. The ones disengaging might not sign up. So measuring outcomes could exaggerate impact if we don't account for that. For example, if all 20 leadership fellows stay and get promoted, was it the program or the fact they were stars to begin with? Mitigating that requires inclusion and encouragement of those who might not otherwise have access – which the program can aim for (maybe specifically include URM or women faculty who face advancement barriers). Also, small numbers: HUCM might have, say, 200 faculty – if 5 leave per year normally, and after interventions 4 leave per year, it's hard to ascribe cause with confidence. Over a few years a trend might emerge, but within two years data will be thin. **Benchmarking** is also difficult because many factors external to HUCM (e.g. local job market, family situations) affect retention. Lastly, ensuring *sustainability* of these offerings is a concern – wellness and leadership programs often require continuous effort (facilitators, materials, maybe external coaches). If not institutionalized, they can fizzle. The KPI should perhaps include making it part of the regular faculty development budget.

Refinements: To make KPI 10 meaningful:

- **Measure burnout and satisfaction directly:** Use a validated survey instrument annually (or use relevant items from AAMC or COACHE surveys). KPI could be "Decrease in faculty burnout scores by X%" or "Increase in job satisfaction by X points on a 5-point scale". If baseline burnout is high, a modest improvement would be success. This provides a quantifiable outcome beyond attendance.
- **Track retention of participants vs non-participants:** For leadership program, specifically monitor the career paths of those 20 faculty: promotions, retention at 2 and 5 years, etc. If none of the leadership-trained faculty leave over 3 years, that's a strong indicator (especially if some in a comparison group did leave). As noted, a real example found leadership program alumni had markedly lower attrition [13]. We can attempt similar analysis. For wellness, if possible, track overall retention and see if it improves after program implementation (though small sample, even a drop from 5 departures/year to 3 is notable qualitatively).
- **Faculty testimonials or qualitative indices:** Add a question in exit interviews or stay interviews: *"Did our faculty support/wellness efforts influence your decision to stay at HUCM?"*. It might not be solely responsible, but if some say yes, that's a powerful narrative. Similarly, collect success stories (e.g. a faculty who was burning out but after engaging in wellness and getting leadership training, chose to stay and is thriving). These can complement numbers in reporting impact.
- **Participation goals and diversity:** Aim for broad participation especially in leadership dev. If 20 slots are offered, set a goal to fill all 20 (or even have competition for slots). Also ensure diversity in those selected (track gender, race, department). It would be important to see URM faculty in particular represented, as they often face exclusion from informal leadership opportunities. So a metric could be "at least 50% of leadership program participants are women and 30% URM, reflecting faculty demographics." This ensures the benefit is equitably distributed and likely has more effect on those facing barriers.
- **Follow-through on leadership roles:** After the training, track if participants take on new leadership positions (chair a committee, get promoted to dean, etc.). A successful program likely yields higher internal promotions. KPI could note "X of 20 participants have assumed new leadership roles within 2 years." This demonstrates capacity building and institutional impact.
- **Integrate wellness into policy:** For sustainability, measure institutionalization: e.g. "Faculty well-being committee established" or "Wellness days/benefits incorporated into faculty policies." If the interventions lead to formal changes (like protected time for wellness or mentorship circles becoming a norm), that should be captured as it indicates lasting change.
- **External benchmarks:** If possible, compare faculty turnover rate to similar schools or national averages for academic medicine. If HUCM's rate drops below the norm after these programs, it's a success indicator to highlight. If a CUPA-HR-type survey for faculty exists analogous to staff (which showed 22% lower turnover with wellness programs [52]), use that as a benchmark to aim for.

By implementing these refinements, KPI 10 will not just count wellness events but will gauge whether those efforts are moving the needle on the ultimate goals: happier, more engaged faculty who choose to stay and lead. Considering the intangible nature of wellness, a mixed approach (quantitative survey + qualitative feedback + tracking promotions/attrition) will provide the most convincing evidence of impact. If HUCM can show even anecdotal correlation that after introducing these programs faculty attrition dropped or morale improved, it would validate the investment and encourage continuation (and could contribute to the growing literature on faculty wellness initiatives in academic medicine).

Conclusion: Across all 10 KPIs, our evaluation highlights the importance of coupling **activity metrics** with **impact metrics**. Many of the proposed KPIs are strong in aligning with the strategic aims and are feasible to measure, but they risk being mere checkboxes unless refined to capture meaningful outcomes. By incorporating literature-backed practices – such as measuring changes in attitudes/skills for pipeline programs [23], tracking retention and promotion rates for faculty development efforts [8], and assessing climate improvements – HUCM can ensure these KPIs truly guide future decisions. The emphasis should be on quality and effect: not just *how many* trained, or *how many* attended, but *what difference did it make*. Prioritizing KPIs that yield actionable insights (like identifying gaps or success factors) will enable continuous improvement of the initiatives and help HUCM demonstrate the grant's impact in a compelling, data-driven manner.

Finally, focusing on **equity** in each KPI – ensuring that improvements are measured in terms of closing gaps (be it student access, faculty advancement, or support utilization) – will keep the grant's social justice mission at the forefront. With these enhancements, the KPI framework will not only monitor progress but actively drive it, and produce knowledge that can be shared with the broader medical education and DEI community (potentially leading to publishable outcomes and models for others to replicate).

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