Oregon Health & Science University
School of Medicine

Scholarly Projects Final Report

Title *(Must match poster title; include key words in the title to improve electronic search capabilities.)*

Evaluating the Efficacy of the Pay It Forward Mentorship Program and Determining Qualities of Effective Mentorship

Student Investigator's Name

Patrick Pham

Date of Submission *(mm/dd/yyyy)*

3/23/2026

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Project Course *(Indicate whether the project was conducted in the Scholarly Projects Curriculum; Physician Scientist Experience; Combined Degree Program [MD/MPH, MD/PhD]; or other course.)*

Scholarly Project Curriculum as part of the MD course

Co-Investigators *(Names, departments; institution if not OHSU)*

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Mentor's Department

Office of Diversity, Equity, Inclusion, and Belonging, Dean's Office

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Concentration Lead's Name

Lisa Silbert MD

Project/Research Question

What are the qualities of effective premedical student mentorship?

How does the Pay It Forward's programs pairing process relate to mentorship efficacy and mentee satisfaction?

Type of Project *(Best description of your project; e.g., research study, quality improvement project, engineering project, etc.)*

Mixed methodology research project

Key words *(4-10 words describing key aspects of your project)*

Qualitative research; Effective mentorship, Pay It Forward mentorship program

Meeting Presentations

If your project was presented at a meeting besides the OHSU Capstone, please provide the meeting(s) name, location, date, and presentation format below (poster vs. podium presentation or other).

Publications *(Abstract, article, other)*

If your project was published, please provide reference(s) below in JAMA style.

Submission to Archive

Final reports will be archived in a central library to benefit other students and colleagues. Describe any restrictions below (e.g., hold until publication of article on a specific date).

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Next Steps
What are possible next steps that would build upon the results of this project? Could any data or tools resulting from the project have the potential to be used to answer new research questions by future medical students?

The next step for this project is to use these themes to help create mentor development programs and guidelines on cultivating effective premedical student mentorship. In addition, developing a compilation of resources for mentors may help them to provide more effective mentorship. Furthermore, to better measure the effectiveness of the program's pairing process, more participants may need to be recruited for a stronger analysis.

Please follow the link below and complete the archival process for your Project in addition to submitting your final report.

https://ohsu.ca1.qualtrics.com/jfe/form/SV_3ls2z8V0goKiHZP

Student's Signature/Date *(Electronic signatures on this form are acceptable.)*
This report describes work that I conducted in the Scholarly Projects Curriculum or alternative academic program at the OHSU School of Medicine. By typing my signature below, I attest to its authenticity and originality and agree to submit it to the Archive.

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Mentor's Approval *(Signature/date)*

Scholarly Project Final Report

Report: *Information in the report should be consistent with the poster, but could include additional material. Insert text in the following sections targeting 1500-3000 words overall; include key figures and tables. Use Calibri 11-point font, single spaced and 1-inch margin; follow JAMA style conventions as detailed in the full instructions.*

Introduction *(≥250 words)*

Mentorship is widely recognized as an important aspect of medical education, facilitating individuals' career development, achievement of goals, and reducing burnout.[1] Most existing literature focuses on mentorship between medical students and faculty, or between junior and senior faculty. In this capacity, mentors offer psychosocial and career guidance, feedback, insights, role modeling, and support their mentees' goals.[2] An important mentorship dynamic that is not thoroughly covered by current literature is the one between premedical student mentees and medical student mentors. While there are many studies outlining how to be an effective mentor for physician faculty, residents, and medical students, there is less information about the qualities necessary to be an effective mentor for premedical students.[2,3] This may be an important avenue to explore as it is one way to promote diversity within the healthcare profession.[4] As the discordance between racial/ethnic representation in medicine as compared to the U.S population continues to grow, mentorship among students underrepresented in medicine may be one way to address this gap and improve recruitment of diverse applicants. [4,5]

There have been relatively few studies examining premedical student mentorship programs and how they may benefit premedical students, especially those who are underrepresented in medicine. Rinderknecht et al. investigated a novel premedical mentorship program which incorporated an antiracist framework to mentorship with a focus on race-concordant mentor-mentee pairings.[6] As a result of this program, there was an improved understanding of the medical school application timeline, sense of peer support, and personal statement writing. The benefits of a race concordant mentorship pairing resulted in students from background underrepresented in medicine feeling understood by their mentor and reported to have a tailored mentorship experience. Maniam et al. found that premedical student mentorship may play a role in reducing negative emotions and attitudes towards medical school applications.[7] They found that mentorship was primarily sought after and beneficial in providing psychosocial support for mentees. While all these studies support the benefits of premedical mentorship, there is a lack of specific guidance on how to best pair mentors with premedical student mentees, as well as the qualities that are found in effective mentors for premedical students.

This study focused on the Pay It Forward (PIF) mentorship program, an OHSU sponsored program focused on pairing premedical undergraduate students from Oregon with current OHSU medical students. Its mission is to support diverse students who come from backgrounds underrepresented in medicine in pursuing and building an application for medical school. Mentees are paired with mentors for at least one year. This mentorship dyad is paired together after mentees complete an application which asks them to rank several demographic preferences for mentor matching. These include connecting students based on their shared gender identity, cultural background, interested specialties, or undergraduate institution. This pairing process has successfully been implemented for the past six years; however, there is a lack of evidence to support if this is an effective way to pair mentors with premedical student mentees. While the literature supports the pairing of medical student peer mentors and mentees together through shared

sociodemographic factors, it is unclear if this would be equally as effective for premedical students. [8] In addition, it is unclear what makes an effective mentor for premedical students and how programs can structure their pairing process to facilitate effective mentorships. Given the program's mission to reach underserved premedical students, it is important to investigate this process to facilitate improved understanding of how to develop premedical mentorship programs and improve mentorship opportunities for underrepresented students.

This study sought to determine the qualities that encapsulate effective premedical student mentorship, specifically with regards to mentor qualities. In addition, it investigated mentee's satisfaction and the effectiveness of the Pay It Forward program's pairing process.

Methods *(≥250 words)*

This is a mixed methods study utilizing qualitative analysis of individual interviews among a cohort of PIF mentors and mentees to determine effective mentor qualities. Quantitative analysis was also conducted to evaluate the efficacy of the pairing process. The first part of this study used a thematic analysis framework based on the mentees' narrative comments on their PIF applications from 2019-2025. These were conducted to ascertain common themes and inform interview questions for the second and primary aspect of the study. The study's primary intervention was individual interviews conducted with the most recent 2024-2025 Pay It Forward cohort of mentors and mentees.

Subjects

Participants are Pay It Forward mentors and mentees who participated in the program in the 2024-2025 academic year. Mentors are defined as current OHSU medical students who applied to be part of the Pay It Forward mentorship program. Mentees are premedical students who are either from Oregon or currently go to an Oregon-based undergraduate institution. Eligibility included being a minimum age of 18, and preference for the following groups: individuals who identify with a background that is underrepresented in medicine, low socioeconomic status, and/or from a rural community. All mentors and mentees in the 2024-2025 cohort were emailed to voluntarily take part in individual interviews to share their thoughts about their mentorship experience. A random sample was obtained, and a total of 18 mentees and 12 mentors completed individual interviews.

Data collection

Narrative comments from mentee applications from 2019-2024 were aggregated on a secured excel spreadsheet and de-identified.

Individual interviews were conducted through a Webex meeting link and were recorded with participant consent. Each interview was conducted by the author, a medical student who also is part of the student board of the Pay It Forward mentorship program. All participants were informed of this affiliation, and verbal consent was obtained prior to the start of the interview. Mentors and mentees were asked 10 questions about their mentorship experience, as well as completed a Mentorship Effectiveness Scale. Transcriptions were obtained from the platform's recording software and were utilized to develop themes.

Statistical approaches

All mentees from 2019-2024 were asked "What are you do you hope to gain from the Pay It Forward Mentorship program?" as part of their written application. Their narrative comments were thematically analyzed using the Braun and Clark (2006) method to understand mentee's goals and potential preferences for mentors.[9] All narrative comments were de-identified and organized onto an excel sheet. Initial codes were generated for each cohort year's applications. These initial codes were then generated into a codebook and then used to develop themes. These themes were then aggregated for the 2019-2024 years and then used to help inform the generation of interview questions for the 2024 cohort.

For each individual interview, transcripts were obtained, de-identified and aggregated onto an excel sheet. Using the Braun and Clark (2006) method, these aggregated transcripts were analyzed, initial codes were developed, and themes were generated.[9]

Quantitative analysis was also conducted. Mentees (n=16) were asked to complete a Mentorship Effectiveness Scale, which is a validated scale used to measure efficacy of mentorship.[10] The maximum score for each scale is 60. Mentee's scores were correlated with the number of shared sociodemographic factors they had with their mentor, as outlined in their application. These include shared cultural background, gender identity, specialty interest, and undergraduate institution. Spearman Rho correlation was calculated to measure the correlation between mentee's rating of their mentor's effectiveness with the number of shared backgrounds they had with their mentor. In addition, a Spearman Rho correlation was also conducted for mentees level of satisfaction with their mentor.

Results *(≥500 words)*

Thematic Analysis of Past Cohort Applications' Narrative Comments:

Braun and Clark (2006) thematic analysis of over 1000 narrative comments yielded 32 themes across four years of data. Among these 32 themes, the 5 most prevalent themes are as follows:

Shared Lived experiences: Mentees seek mentors who have similar shared lived experiences and socioeconomic backgrounds as they do. They prioritize being able to connect with folks who may have gone through similar experiences as they have on their path toward medicine.

Supporting Marginalized Students: Marginalized mentees are those who identified as being from backgrounds underrepresented in medicine and/or first-generation students. These students seek mentors who are empathetic to their background. They seek guidance and support as they may not have other individuals in their lives who have gone through a similar process.

Insights on Mentor's Path: A desire for mentees to know their mentors own journey and how they successfully matriculate into medical school. They seek their mentor's advice and wish to know common pitfalls to avoid along the way.

Demystifying Application Process: Learning how to navigate the confusing medical school application process and receiving support throughout one's application.

Continuity: A desire for a mentor who is reliable and available throughout the entire process of applying to medical school. Mentees value having mentors who can help them each step of the way and can offer longitudinal support.

Thematic Analysis of Mentor Interviews

12 mentors were interviewed and their comments were thematically analyzed following the Braun and Clark (2006) framework. Four major themes emerged from these interviews with regards to what mentors believed facilitated effective premedical student mentorship (Fig. 1)

Fig 1. Pay It Forward mentors' perspective on the qualities that make up effective mentorship for premedical students. 12 mentors were interviewed and transcriptions were thematically analyzed to produce 4 overall themes.

Resourcefulness: A mentor who is knowledgeable of various resources and can provide accessible resources to their mentees to promote success in applying to medical school. As mentees often lack knowledge and insight into the process of applying to medical school, mentors can bridge this disparity by sharing helpful resources and information that led to their own success.

Egalitarianism: Mentors prioritize fostering a mentorship dynamic that is peer-like and personal. The mentor offers a safe and nonjudgemental environment for bilateral communication regarding professional and personal topics

Near-Peer Motivator: Mentors offer psychosocial support for their mentees during an often-difficult period in their academic journey. Having previously been in their shoes, they offer a strong empathetic perspective, provide frequent reassurance, and encouragement.

Active Commitment: Mentors are invested in their mentees wellbeing and success throughout the application process. They prioritize frequent and open communication, push their mentees to reach their goals, and make it a priority in their schedule to support their mentee(s).

Thematic Analysis of Mentee interviews

18 mentees were interviewed and each of their interview transcripts were thematically analyzed using the Braun and Clark (2006) framework. Five major themes emerged from these interviews (Fig. 2) and are as

follows:

Fig 2. Pay It Forward mentees' perspective on the qualities that facilitate effective mentorship for premedical students. 18 mentees were interviewed and transcriptions were thematically analyzed to produce 5 overall themes.

Consistent and Proactive Approach: Mentors contact mentees at regular and predictable intervals which demonstrate their commitment to the mentee. Mentors should initiate these interactions to help provide structure for mentees. Guidance that is provided should also follow similar themes and topics as to not confuse the mentee.

Direct Communication: Mentees prefer honest and straightforward communication. They do not want "sugar-coated" feedback or criticisms as they want to ensure they are on the right path as they develop their applications and build their portfolios.

Vulnerability: Desire for mentors to be open with sharing aspects of the process they struggled with and how they overcame it. They are transparent to their mentees about their own strengths and weaknesses in what they can provide in mentorship.

Resourcefulness: Mentors should be able to provide a variety of resources and are knowledgeable about which may be pertinent to their mentee. They tailor their recommendations to ensure the individual success of their mentee in alignment with their goals.

Non-hierarchical: Meeting mentees where they are at and mitigating the component of intimidation that comes with interacting with a medical student. They acknowledge the potential and inherent power imbalance that may exist between mentors and mentee. Mentors can achieve this by reaching out to their mentees first and fostering a compassionate approach to mentorship.

Correlation between Mentee Satisfaction and Mentor Background Alignment

The Mentor Background Alignment is defined by how many sociodemographic factors are shared between the mentee and the mentor. This is based off the ranked preferences that mentees select in their applications for how they want to be paired with a mentor. These factors include cultural background, gender identity, undergraduate institution, and specialty interest. At a minimum, mentees must have 1 shared background with their mentor, and a maximum of 4. During their interviews, mentees were asked to rate their overall satisfaction with their mentorship from a scale of 1-10. The scores for each mentee were

then correlated using Spearman Rho correlation against their level of Mentor Background Alignment (Fig 3.) The Spearman Rho coefficient was 0.14 with a non-significant P value of 0.55.

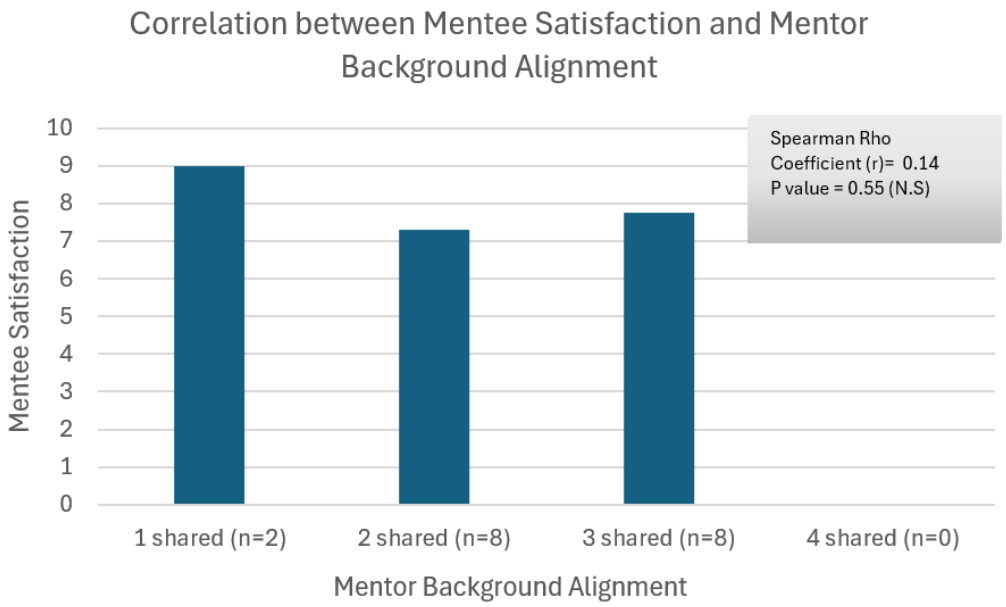

Fig 3. Correlation between Mentee Satisfaction and Mentor Background Alignment. Each column on the X axis represents the mentor alignment, which is a measure of how many of the following backgrounds are shared between the mentee and mentor: cultural identity, gender identity, undergraduate institution, and specialty interest.

Correlation between Mentor Effectiveness and Mentor Background Alignment.

Of the 18-mentee interview, 16 mentees completed the Mentorship Effectiveness Scale, which is a validated 12 question Likert scale that evaluates mentor's characteristics out of a total score of 60.[10] Each of these scores were correlated with the Mentor Background Alignment that each mentee had with their mentor. A Spearman Rho Correlation was performed and revealed a Spearman Rho coefficient of 0.39.

Discussion *(≥500 words)*

A total of 9 themes were identified from mentor and mentee interviews regarding what they perceived to be qualities of effective mentors for premedical student mentees. These themes share many similarities with mentorship themes in the literature for other mentorship dyads, such as with nursing preceptors and physician residents.[2] Of these themes, resourcefulness was one of the most prevalent themes valued by both mentors and mentees alike. This may highlight a unique feature of premedical student mentorship where mentors are key contributors in sharing accessible and important resources for their mentees that may make a meaningful impact on their application. For instance, mentors may share key clinical or extracurricular opportunities that were helpful in their path towards medicine and encourage their mentees to participate as well. In turn, this may expose the mentee to an opportunity they may not have been able to find on their own and enrich their journey to medicine. It may also illuminate that disparities in these resources may serve as a barrier for premedical students from underrepresented and underserved backgrounds. As such, a resourceful mentor may be one who may help bridge disparities for their mentees.

Currently, there is no consensus framework for pairing premedical student mentees with medical

student mentors in mentorship programs. The Pay It Forward Mentorship program has been pairing mentees based on a ranked preference of four shared sociodemographic factors: cultural background, gender identity, undergraduate institution, and specialty interest. This study investigated whether this pairing methodology yielded an effective mentorship for mentees. Based upon the Spearman Rho correlation between the Mentor Background Alignment and their Mentorship Effectiveness Scale score, there was no significant correlation between the two. Thus, our study may suggest that pairing mentees and mentors based on these sociodemographic factors does not make a difference in mentorship effectiveness outcomes. In addition, mentees' satisfaction also showed no correlation with their Mentor Background Alignment. Overall, these correlations may suggest that there may be more effective ways to pair mentors and mentees together and different parameters to consider, such as time availability or communication style. Interestingly, despite this lack of correlation, many mentees subjectively shared in their interviews that having a mentor that they may be able to relate to was an important value for them in mentorship.

There are limitations to this study. One limitation is the low number of participants for correlation analysis. While data saturation was reached for thematic analysis, it may not be sufficient to suggest correlation. Thus, the correlation analysis may not fully capture the true relation between these factors among the entirety of the mentee cohort. Greater number of participants among many cohort years may be needed to draw a stronger conclusion to the suggestions in this study. Furthermore, the Mentorship Effectiveness Scale by Berk et al. 2005 is primarily validated for faculty mentors but was used for this study given the lack of similar scales for medical or premedical student programs.[9] Thus, the scores ascertained from this may not fully capture the true effectiveness of these mentee's mentorship experience. In addition, another limitation of this study is that all themes were analyzed by one coder. While the coder went through multiple iterations of theme generation, the findings in this study may be strengthened by having multiple coders who come to a consensus on a coding book and subsequent theme generation.

The implications of this study may support mentor development for premedical student mentorship programs. It highlights several psychosocial factors in mentorship that may be emphasized when training new medical students mentors, such as creating a non-hierarchical environment and utilizing their individual experiences to serve as a near-peer motivator. In addition, it demonstrates best practices for communicating with mentees and who should initiate these conversations. Given the importance of the theme of resourcefulness, mentorship programs may benefit from supporting their mentors in this specific development. This may be done by compiling resources that may be shared to mentors so that they can best support their mentees. In addition, programs may help to create new resources for mentors and mentee as well to provide more structure in their mentoring.

Conclusions *(2-3 summary sentences)*

Nine themes were generated that outline mentor and mentee perspectives on what makes an effective mentor for premedical students. These themes are consistent with others found in other healthcare mentorship dyads. Mentor resourcefulness emerged as a prevalent theme suggesting it may be an important aspect of premedical student mentorship.

References *(JAMA style format)*

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