Purpose: Much attention has been given to the high levels of depression, suicidal ideation, and burnout during medical student training.1 A growing interest in self-compassion has emerged in medical education, as self-compassion may enhance well-being.2 Gaps remain in understanding the relationships among self-compassion, mindfulness, and well-being, with calls to evaluate the effectiveness of training that promote mindfulness and self-compassion.3 The purpose of this study was to understand the impact of a Mind-Body Medicine (MBM)4 course on medical students self-compassion and specific mindfulness skills. The aims of MBM are to increase self-awareness with the goal of improving self-care and providing a supportive, nonjudgmental community for relationship and skill development. Specifically, we sought to understand how the MBM course: 1) promoted change in the four specific mindfulness facets of observing, describing, acting with awareness, and accepting without judgment, and 2) promoted self-compassion.

Methods: University of Louisville School of Medicine (ULSOM) leaders were trained in Georgetown University’s MBM Program, which is an elective course that includes introduction to mindfulness meditation, guided imagery, writing exercises, group sharing in a supportive community, and other skills that expose students to a variety of mind-body approaches. First year ULSOM medical students (n=22) participated in one of two MBM elective courses offered in Spring 2018; each group was led by two trained facilitators. Students completed two pre- and post-course self-assessments: 1) Kentucky Inventory of Mindfulness Skills (KIMS) and Self-Compassion Scale-Short Form (SCS-SF). Individual pre- and post-test SCS-SF scores and KIMS scores were calculated for each of the four mindfulness facets. Two-tailed, paired t-tests were performed in SPSS to determine whether mean post-test scores were significantly greater than pre-test scores for each mindfulness facet, as well as for SCS-SF scores.

Results: SCS-SF scores showed significant improvement at the post (t=2.08, p=0.000). Total KIMS score was significant pre- to post (t=2.09, p<<0.01) and significant improvements occurred for the following KIMS mindfulness facets: observing (t=2.09, p=0.0158), describing (t=2.09, p=0.0001), acting with awareness (t=2.09, p<<0.01). However, there was no significant improvement for accepting without judgment (t=2.09, p=0.078).

Discussion: Our study assists in further understanding the effectiveness of wellness training and its facilitation of mindfulness and self-compassion. Recent studies note that students who have less self-compassion may exhibit more mastery avoidance goals5 and interventions in the learning environment that teach students how to increase self-compassion and to manage failure are important in relation to well-being. MBM training can facilitate the promotion of specific mindfulness skills, thus potentially expanding students well-being and adaptive coping skills. More specifically, the ability to observe, describe, and act with awareness may help facilitate improved emotion management and coping, as well as mitigate unhealthy reactions to some of the stressful feelings that students experience during medical training.

Significance: The MBM program is a valuable self-compassion and mindfulness training option, and its focus on expanding specific skills that promote learning environments that are supportive and raise students self-awareness may be a key to fostering wellness and preventing burnout. As
we seek to reduce systemic sources of stress for students, we know that life stressors during emerging adulthood can be intense, especially in combination with the demands of medical training. Interventions are needed to increase self-compassion and mindfulness, and MBM training may be a catalyst to facilitate health and well-being.
Faculty-Student Role Perceptions in a Medical School Environment- Findings from an Empathy Map Exercise

Innovation Highlights
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Purpose: A positive learning environment requires the faculty to be mindful of the students experience and sensitivities. Empathy is the ability to experience another persons thoughts and feelings from their own perspective. An empathetic environment has been related to academic success and may have a stronger impact as compared to academic competencies of teachers. However, the evidence is sparse with regard to the role of empathy within the faculty-student relationship in the context of medical education. An empathy-map is a collaborative tool initially developed to help businesses gain insight into their customers experiences. The authors hypothesized that this tool may be helpful in facilitating empathy between faculty and students for each others experiences. This study examines the findings from a facilitated group activity utilizing an empathy-map.

Methods: The empathy-map tool was adapted and used in concurrent workshop sessions with faculty and students in a workshop session. A total of 54 faculty members (F-Group) and 40 third-year medical students (S-Group) participated in the session. The F- and S-Groups were each broken into smaller groups of 5-10 people. The F-group was asked to discuss and reflect on what a student sees, hears, says/does, and thinks/feels. The S-group was asked to discuss and reflect on what a faculty sees, hears, says/does, and thinks/feels. After a 30-minute discussion, the groups wrote down their summarized reflections and posted them on empathy maps, one for each group. Then, the S- and F- groups were brought together to have a facilitated discussion of common and disparate themes from their empathy maps. The combined time spent on the activity was 1 hour and 15 minutes. Retrospectively, the narrative remarks posted on the F- and S-group maps were analyzed using a natural language processing based sentiment-analysis tool. The aggregate score for each dimension (sees, hears, says/does, and thinks/feels) was recorded and was represented in a scale ranging from -1 to +1, with 0 being neutral.

Results: S-groups perception of the faculty had a negative aggregate score with a mean of -0.31. Individually, the S-group sees score was -0.18; hears was -0.66, says/does was -0.02, thinks/feels was -0.37. For the F-groups perception of the students, there was an aggregate score of +0.06. Individually, the F- group sees score was -0.36; hears was +0.44, says/does was +0.09, thinks/feels was +0.05. Individual narrative comments were reviewed.

Discussion: The empathy-map provided a practical visual medium to facilitate a constructive discussion on the roles of faculty and students. The sentiment analysis conducted on the collected narrative data from the empathy-maps provided numeric confirmation of the discussions during the workshop. The students were noted to be perceptive of the difficulties faced by the faculty (e.g., overworked, exhausted, unable to balance time) as evidenced by an aggregate negative sentiment score. Notably, student reflections had statements such as intolerant to students curiosity and too busy for teaching. The faculty perceived the student sentiments to be overall positive (e.g., happy, grateful, eager to learn) but nervous and underconfident with their clinical skills. The narratives reflected on these maps brought out valuable insights and allowed for a non-threatening, honest discussion of the student-faculty relationship.

Significance: To the authors knowledge, this is the first study utilizing a visual tool to facilitate
discussion on empathy in the faculty-student relationship in a medical teaching environment. This study also demonstrated that a natural language processing tool may be useful to quantitatively assess perception of student and faculty roles. Future studies should assess the utility of the Empathy Map Exercise in creating an empathic student-faculty relationship in medical schools. In our study, the empathy map exercise successfully facilitated discussion between faculty and students on each others roles.
Purpose: Despite years of educational success, many students enter medical school with little understanding of how learning works and how they learn best. As such, the rigors of medical school behoove students to assess their motivations and attitudes toward learning, what strengths they possess as learners, and where they should focus their growth as learners. Our Student Development team supports students to foster self-awareness about their learning development in medical school and as life-long learners. As such, we have developed a Learner Profile.

Methods: We use a variety of educational assessments to help students cultivate self-awareness and foster learning development. The Learner Profile, an innovation developed by our Department, is a method to collect and interpret data related to students’ strengths and weaknesses. The combined tools relate to learning, to personality type in relationship to learning, and to preferred methods of gathering, organizing, and thinking about information. The educational assessments we use include: 1) Success Types Indicator (STI), 2) Visual Aural Read/Write and Kinesthetic Strategies (VARK) Questionnaire, and 3) Learning and Study Skills Inventory (LASSI). For more than five years, we have used these instruments to enhance and support student learning. These self-report assessments are required as part of the pre-matriculation process. Results are provided immediately to the students.

Results: The STI assesses patterns in study behaviors based on Jungian typology. Data from classes of 2019-2022 (n=324) indicate that 37.65% of students have a preference towards Extraversion, and 62.35% towards Introversion. Regarding the Sensing and Intuitive dichotomies, students report an 80.25% and 19.75% preference respectively. The Feeling and Thinking dichotomy preferences were split 43.21% and 56.79%, respectively. There was a 73.15% preference for the Judging dichotomy, while 26.86% for Perceiving. The most common combination for students is ISTJ (28.4%), and the least common was INFJ (0.93%).

The VARK identifies preferences or multiple preferences for the way one works with information. Data from classes of 2019-2021 (n=243) indicate that kinesthetic learning is the primary modality preference for 46.5% of students. Visual learning is preferred by 41.6% of students, followed by 35.4% Read/Write learners, and Aural learners constitute 28%.

The LASSI uses ten sub-scales to measure a student’s perception and use of learning and study strategies related to skill, will, and self-regulation. The three subscales with the lowest average scores in classes of 2021-2022 (n=160) are Selecting Main Ideas (46.6), Self-Testing (47.5), and Using Academic Resources (48.4). The Test-Taking sub-scale had the highest average score (66.13).

Discussion: Students demonstrate a strong identification with the Sensing type that reflects a preference for facts and details. This identification suggests that students who identify as a Sensing type may need to develop the abilities to create broader connections in the mastery of their content, seek patterns, and find connections within the medical knowledge they are learning, that are strengths typically associated with Intuitive types.

The VARK Questionnaire indicates that students show strong visual and read/write preferences. However, students have high exposure to aural and read/write modalities in their preclinical
coursework. These findings provide direction about how we can help students best adapt to any learning environment.

**Significance:** Learner Profile helps us understand, challenge, and direct students. This innovation also provides a global perspective of our student population. Thus, the use of a Learner Profile has resulted in changes in practices and guides coaching with students. Specifically, the data have been used to customize workshops, tutor trainings, and faculty/staff development opportunities to better address student needs. Additionally, this holistic approach to understand how a student thinks about their learning allows the staff to tailor individual consultations by understanding where a student's strengths and opportunities for future development lie.
Faculty Grit, Reflexivity, and Character Strengths: Opposing Elements of Stress

Innovation Highlights
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Purpose: Faculty in 21st century academic medicine must persevere and sustain interest towards their professional goals, while managing challenging workloads and enduring high levels of stress. Resilient efforts towards these goals requires grit. Research indicates that those who engage in reflexivity or self-evaluation of actions, can persevere with high levels of grit (East et al, 2010).

Inherent individual characteristics such as personality traits have been reported to be significantly correlated to grit (Duckworth & Quinn, 2009). While high levels of positive personality traits would indicate elevated levels of grit, lower levels of these traits would require auxiliary personal qualities to mediate adverse effects on grit. Virtuous character strengths such as curiosity, hope, zest, persistence, judgment, and self-regulation (Martinez-Marti & Ruch, 2017) can be developed to compensate reduced levels of stable personality traits which are often invariant in adulthood. It is prudent to examine character strengths that help faculty be resilient and have grit, despite inevitable obstacles of perceived stress and reduced levels of positive personality traits which limit these qualities.

The purpose of this study is to (a) analyze differences in faculty grit in a new faculty career development academy as impacted by perceived levels of stress, personality traits, and personal character strengths, and (b) determine how mindful development of reflexivity has the capacity to foster grit among faculty.

Methods: An exploratory mixed-methods analysis was used for this study. Twenty faculty were interviewed at a Midwestern medical college for approximately thirty minutes about sources of stress that impacted their levels of well-being and grit. Qualitative analysis reported themes that were used for follow-up focus groups and self-reported surveys, which included the Short Grit Scale (Grit-S), Perceived Stress Survey, Values in Action Inventory of Strengths (VIA-IS), and the Five-Factor Personality Inventory (IPIP-50). Survey data analyzed with IBM® SPSS® 24.0. Focus group transcriptions analyzed with NVivo 11. This study is approved by the institutional IRB.

Results: Major sources of faculty stress included systemic sources as the electronic health record (65%) and physician scheduling (45%) and individual sources as work/life imbalance (30%) and little/no protected time for academic pursuits (25%). Reported mediators of perceived faculty stress included access to physical, psychological, and temporal resources; leadership, mentorship, and staff support; and use of positive psychology such as mindfulness training, use of nudge theory and PERMA (positive emotion, engagement, relationships, meaning, accomplishments). Positive relationships were reported between personal traits of conscientiousness and openness to perseverant elements of grit. Inverse associations between character strengths of curiosity, persistence and self-regulation and stress were reported.

Discussion: Maintaining professional interest and persevering towards professional goals can be assisted by having shared values with leaders and obtaining support for systemic elements of the electronic health record and non-patient care responsibilities. Flexibility on scheduling and planned redundancy in time will help with work/life balance.

Significance: Reflexivity and character strengths can offset elements of perceived stress to
maintain high levels of grit.