

Faculty Steering Committee AGENDA

Thursday, December 15, 2016 • 12:00pm- 1:30pm • Daly Board Room, MS 186

<i>Topic</i>	<i>Presenter</i>	<i>Discussion</i>	<i>Action Item/Resolution</i>
1. Call to Order -Approval of Minutes from November 2016 meeting	Emily Walvoord		➤ Minutes unanimously approved by the FSC.
2. Dean's Report	Steve Bogdewic	<ul style="list-style-type: none"> • Dean's Report • Dr. Bogdewic updated the committee on the ISA 2.0 results (document attached), touching on student wellness and mental health. He also discussed student mistreatment and the school-wide system for addressing it, along with the opening of the Ombuds office. Lastly, the Conflict of Interest (COI) policy was discussed and moved to endorse. • Question: IUSM Website and MED Net, how to integrate these better? There are no links to Mednet on IUSM webpage? Holly Vonderheit will follow up with the communications team to be sure this is fixed. • Question: Will Dr. Hassan be working with more than just Medical Students, for example: GME, Faculty, etc? Yes, it will be for all within IUSM. • Dr. Samia Hassan will be the director of the Student Wellness for IUSM. Dr. Gebke has agreed to chair the wellness initiative. 	➤ COI Policy was endorsed by the FSC.
3. Committee Report a. Lecturer & Clinical Rank Faculty Promotions Committee	Michael Trautman	<ul style="list-style-type: none"> • Lecturer & Clinical Rank Faculty Promotions Committee Annual Report • Clinical faculty do not go forward because they lack scholarship and do not have time aside from clinical duties to complete scholarship and speaking engagements. • Guidelines may be an issue – these are being reviewed. • Why is important for clinical faculty to get promoted, and what motivation do they have to want to be promoted? For Clinical Track there is no monetary incentive to gain full rank. If it is important for clinical faculty to gain advancement, IU Health will need to express interest in the importance of this as well. It depends on Faculty career aspirations, and how they view it – if advancement is viewed as more than just a monetary value. • Encourage chairs to discuss with faculty about timing to submit dossier for rank advancement. • What is the chairs motivation to have faculty go through the advancement process? One motivation is to have faculty within the department that can serve on primary committees, and delegate responsibility for mentoring to people who have gone through the process already. • Emily will work on data collection in regards to Clinical Faculty Advancement and share with committee. 	

		<ul style="list-style-type: none"> • Improve how data is kept • Older students that did not do well on the MCAT? Many of them may have applied to med school several times, and are just now being accepted • There is a great deal of data that could not be accessed. • Need to be sure that all advisors are trained the same way, to assist students the same across all 9 campuses. • What is happening with URM students? SHELF exam scores are low. • GQ data results being anonymous does not allow for a connection between mistreated students and scores; however, data done here at IUSM is available and could be looked at in this relation. • Issues to start working on: 1st year resources; make sure advisors are well trained and full time employees, have one person leading training (curriculum, test taking skills); funding for step 1 & 2 question banks and resources; student environment; pre-matriculation program for students on how to be successful in medical school 	
6. Adjournment	Emily Walvoord		

Dean's Update

Executive Vice Dean Steve Bogdewic



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Independent Student Analysis 2.0 Results (74% response rate)

Question/ Category	Satisfaction Score	
	ISA 1.0	ISA 2.0
Overall, I am satisfied with my IUSM experience.	3.88	3.88
There are IUSM hosted events that encourage the integration of the student body / College & House	3.64	3.78**
I am satisfied with my access to an academic advisor / Advising	3.52	3.95***
Overall, my IUSM campus has inviting facilities / Facilities	3.98	4.04
I am satisfied with clinical skills instruction (patient interview and/or physical diagnosis) in the curriculum / Preclinical Curriculum	3.39	3.71***
I am satisfied with the amount/quality of formal formative feedback in my clerkships/ Formative Feedback	3.71/3.53	3.51*/3.27***

*=p<0.05, **=p<.01, ***=p<.001

ISA 2.0 Results (74% response rate)

Question/ Category	Satisfaction Score	
	ISA 1.0	ISA 2.0
There is adequate time to prepare for Step 1 / Board Preparation	3.17	2.80***
I am satisfied with the overall quality of Global Longitudinal Intercession Curriculum (GLIC) sessions for students / Clerkship Preparation	2.90	2.84
There is adequate support for students transitioning to Indy for their MS3/4 years / Clerkship Preparation	3.19	3.58**
I am satisfied with the quality of the clinical curriculum / Clinical Curriculum	3.96	3.83*
The different location sites within a clerkship offer a consistent learning experience / Clerkship Learning Environment	3.91	2.99***
Overall there is adequate attention to student wellness / Wellness	3.54	3.52

*=p<0.05, **=p<.01, ***=p<.001

Mistreatment

Question	%A/SA (1.0 -> 2.0)				
	MS1	MS2	MS3	MS4	Overall
Are you aware of IUSM's student mistreatment policy?	51 → 73	46 → 64	59 → 79	63 → 61	53.6 → 68.2
Do you know how to report student mistreatment?	55 → 71	61 → 59	43 → 74	46 → 57	47.6 → 64.5

Question	% A/SA (1.0 -> 2.0)			
	MS1	MS2	MS3	MS4
If I witnessed mistreatment of a fellow student, I would report the incident	90 -> 86	82 -> 74	72 -> 75	70 -> 66
If I felt mistreated, I would report the incident	78 -> 82	69 -> 67	65 -> 61	61 -> 55

% A/SA = % who agreed/strongly agreed

System for Addressing Student Mistreatment

- School-wide System includes:
 - Teacher-Learner Advocacy Committee refocused on monitoring learning environment, fostering professionalism
 - IUSM Ombuds Office launched Nov 1st
 - Online system for confidential reporting and monitoring
- Dedicated website on MedNet

<https://mednet.iu.edu/Pages/SupportResources/Learning-Environment.aspx>



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LEARNING ENVIRONMENT

IU School of Medicine Learning Environment
IU School of Medicine strives to provide a positive, inclusive environment that is conducive to teaching and learning and embodies the core values of excellence, respect, integrity, diversity and cooperation.

Learners play a key role.
The School relies on learner feedback to continuously monitor and improve the learning environment—both to identify concerns in the learning environment as well as when IU School of Medicine is at its best. Several avenues are available for learner input, including course and clerkship evaluations, evaluations of individual instructors, the annual Association of American Medical Colleges (AAMC) Graduation Questionnaire, and information submitted through this platform.

All members of the IU School of Medicine community are expected to uphold the tenets of the Honor Code. In maintaining the highest standards of professionalism, IU School of Medicine is committed to responding in a systematic manner to incidents of student mistreatment and violations of the Honor Code and Teacher-Learner Conduct Policy. Through a commitment to recognizing exemplars of professionalism, those who model the IU School of Medicine Honor Code through daily interactions with others, the School demonstrates its core values in action.

How can I recognize an exemplar of professionalism?
To recognize when the IU School of Medicine learning environment is at its best, the School community is committed to celebrating those who best model the Honor Code each and every day. To nominate an exemplar role model for recognition, please complete the Nomination Form: Exemplar Role Model of the Honor Code. Learners may use this form to nominate faculty, residents, fellows, other students, and staff members of the IU School of Medicine community.

What is student mistreatment?
Per the Association of American Medical Colleges, "mistreatment either intentional or unintentional occurs when behavior shows disrespect for the dignity of others and unreasonably interferes with the learning process. Examples of mistreatment include: sexual harassment; discrimination or harassment based on race, religion, ethnicity, gender, or sexual orientation; humiliation; psychological or physical punishment; and the

Forms

[Report Mistreatment](#)
[Exemplar of Professionalism](#)

Resources

[Mistreatment Reporting Process](#)
[Learning Environment FAQ](#)

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IUSM Individual Conflicts of Interest (COI) Policy

- Captures all of the relevant COI policies that impact IUSM stakeholders – learners, faculty, staff, Board of Trustees members
- Safeguards against personal relationships from interfering with judgments or decisions affecting employment, academics, career progression, admissions or financial gains.



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Questions



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Independent Student Analysis (ISA) 2.0 Survey Results

*Michelle Chung, Avinash Inabathula
and Andrew Piropato*



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Goals of ISA 2.0

- Reassess key areas and questions
- Gather data on C & H, Connections
- Deliver addendum to ISA final report

Considerations

- When comparing ISA 1.0 and 2.0 data, consider differences in...
 - Timing
 - Goals
 - Response rate
 - Free response



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Response Rate

Current Campus	Total	MS1	MS2	MS3	MS4	Class Year	Response Rate
Bloomington	0.89	0.97	0.92	0.63	0.63	I	0.83
Evansville	0.90	0.96	1.00	0.70	0.33	II	0.84
Fort Wayne	0.93	0.97	0.97	0.92	0.75	III	0.64
Indianapolis	0.66	0.72	0.73	0.61	0.64	IV	0.64
West Lafayette	0.85	0.92	0.95	0.75	0.44	Total	0.74
Muncie	0.83	0.79	0.91	0.67	n/a		
Northwest	0.85	0.87	0.96	0.63	0.67		
South Bend	0.80	0.80	0.91	0.86	0.55		
Terre Haute	0.86	0.87	0.88	0.83	0.85		

Overview

<u>New</u>	<u>Improved</u>	<u>Unchanged</u>	<u>Requiring Attention</u>
Connections C & H	Advising Facilities Preclinical curriculum	Mistreatment Formative feedback Board preparation	Clerkship Preparation Clinical Curriculum Clerkship Learning Environment Wellness

Question	Satisfaction Score	
	ISA 1.0	ISA 2.0
Overall, I am satisfied with my IUSM experience.	3.88	3.88

C & H Connections Advising Facilities Pre-Clin Mistreatment Feedback Clinical Wellness

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College & House

Question	%Yes or Satisfaction score			
	MS1	MS2	MS3	MS4
Have you attended at least one organized College & House event?	67%	50%	27%	16%
I believe the College & House system has a positive impact of my experience.	3.49	3.04	3.10	3.42

Question	Satisfaction score	Satisfaction score
	ISA 1.0	ISA 2.0
There are IUSM hosted events that encourage the integration of the student body	3.64	3.78**

C & H **Connections** Advising Facilities Pre-Clin Mistreatment Feedback Clinical Wellness

** = p<.01



Connections

Question	%Yes or Satisfaction Score	
	MS3	MS4
Have you attended at least one organized Connections Day event?	67%	30%
The education content provided during Connections Days is useful	3.84	4.10
Connections Days provide me with sufficient free time to handle personal issues	4.21	4.12

C & H **Connections** Advising Facilities Pre-Clin Mistreatment Feedback Clinical Wellness



Advising

Question	Satisfaction Score	
	ISA 1.0	ISA 2.0
I know who to approach about academic issues that arise	3.66	3.89***
I am satisfied with my access to an academic advisor	3.52	3.95***
I am satisfied with my access to academic counseling (assistance in acquiring more effective study skills, test-taking strategies, etc.)	3.39	3.87***
I am satisfied with my access to academic tutoring (assistance from faculty or peers in understanding course content)	3.47	3.73***

C & H Connections **Advising** Facilities Pre-Clin Mistreatment Feedback Clinical Wellness

*** = p<.001



Facilities

Question	Satisfaction Score	
	ISA 1.0	ISA 2.0
Overall, my IUSM campus has inviting facilities	3.98	4.04
There is sufficient space for student relaxation of campus	3.17	3.47***
Student relaxation space on campus is comfortable and inviting	3.18	3.52***
Fitness resources and facilities are adequate	3.19	3.57***

C & H Connections Advising **Facilities** Pre-Clin Mistreatment Feedback Clinical Wellness

*** = p<.001



Preclinical Curriculum

Question	Satisfaction Score	
	ISA 1.0	ISA 2.0
I am satisfied with the quality of the preclinical curriculum	3.71	3.69
I am satisfied with clinical skills instruction (patient interview and/or physical diagnosis) in the curriculum	3.39	3.71***

C & H Connections Advising Facilities **Pre-Clin** Mistreatment Feedback Clinical Wellness

*** = p<.001



Mistreatment

Question	%A/SA (1.0 -> 2.0)				
	MS1	MS2	MS3	MS4	Overall
Are you aware of IUSM's student mistreatment policy?	51 → 73	46 → 64	59 → 79	63 → 61	53.6 → 68.2
Do you know how to report student mistreatment?	55 → 71	61 → 59	43 → 74	46 → 57	47.6 → 64.5

Question	% A/SA (1.0 -> 2.0)			
If I witnessed mistreatment of a fellow student, I would report the incident	90 -> 86	82 -> 74	72 -> 75	70 -> 66
If I felt mistreated, I would report the incident	78 -> 82	69 -> 67	65 -> 61	61 -> 55

C & H Connections Advising Facilities Pre-Clin **Mistreatment** Feedback Clinical Wellness

% A/SA = % who agreed/strongly agreed



Formative Feedback

Question	ISA Score 1.0 → 2.0 (%A/SA in 2.0)		
	MS3	MS4	Mean
I am satisfied with the amount of formal formative feedback in my clerkships	3.72 → 3.46** (60% A/SA)	3.71 → 3.55** (69% A/SA)	3.71 → 3.51* (70% → 64%)
I am satisfied with the quality of formative feedback in my clerkships	3.53 → 3.23*** (51% A/SA)	3.27 → 3.31 (52% A/SA)	3.53 → 3.27*** (60% → 52%)

* = p<0.05
 ** = p<0.01
 *** = p<.001

C & H Connections Advising Facilities Pre-Clin Mistreatment **Feedback** Clinical Wellness

% A/SA = % who agreed/strongly agreed



Board Preparation

Question	ISA 1.0 Satisfaction Score		ISA 2.0 Satisfaction Score	
	MS2	MS3/MS4	MS2	MS3/MS4
There is adequate time to prepare for Step 1	2.27	3.17	N/A	2.80***

*** = p<.001



Clerkship Preparation

Question	ISA Score 1.0 → 2.0		
	MS3	MS4	Mean
I am satisfied with the overall quality of GLIC sessions for students	2.74 → 2.98** (38% A/SA)	2.95 → 2.70** (29% A/SA)	2.90 → 2.84 (33% A/SA)
GLIC/Clerkship orientation adequately prepared me for clerkship logistics (i.e. student role, hospital systems)	N/A → 2.97	N/A → 2.95	N/A → 2.96
There is adequate support for students transitioning to Indy for their MS3/4 years	3.24 → 3.36 (46% A/SA)	3.13 → 3.80* (68% A/SA)	3.19 → 3.58** (57% A/SA)
I am satisfied with the <u>administrative guidance and support</u> from the campuses of IUSM when I was on a rotation outside of my home campus	3.63 → 3.36*	3.63 → 3.80	3.63 → 3.58

C & H Connections Advising Facilities Pre-Clin Mistreatment Feedback **Clinical** Wellness

* p <.05, ** p<.01, *** p<.001, % A/SA = % who agreed/strongly agreed

Clinical Curriculum

Question	ISA Score 1.0 → 2.0		
	MS3	MS4	Mean
I am satisfied with the quality of the clinical curriculum	3.91 → 3.77*	4.02 → 3.87	3.96 → 3.83*
The clinical grading system is consistent	3.11 → 2.70***	3.02 → 2.69**	3.07 → 2.70***
The different location sites within a clerkship offer a consistent learning experience	3.25 → 3.04*	3.30 → 2.93***	3.27 → 2.99 ***
I am satisfied with the level of simulation use in the clinical curriculum (e.g. mannequin simulators, phlebotomy and central line mannequins, laparoscopic simulators)	3.34 → 3.20	3.55 → 3.30**	3.43 → 3.26***

C & H Connections Advising Facilities Pre-Clin Mistreatment Feedback **Clinical** Wellness

* p <.05, ** p<.01, *** p<.001

Clerkship Learning Environment

Question	Satisfaction Score	
	ISA 1.0	ISA 2.0
The clinical grading system is clear	3.46	3.00***
The clinical grading system is consistent	3.07	2.70***
The different location sites within a clerkship offer a consistent learning experience	3.91	2.99***

C & H Connections Advising Facilities Pre-Clin Mistreatment Feedback **Clinical** Wellness

*** = p<.001



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Wellness

Question	Satisfaction Score	
	ISA 1.0	ISA 2.0
Overall there is adequate attention to student wellness	3.54	3.52
Mental health services are accessible to students	3.95	3.72***
Health services are accessible to students	4.05	3.78***
I know who to approach about family and personal issues that arise	3.35	3.52**
The school provides adequate resources to support students with families	3.57	3.39**
Students who need time off and leaves of absence are appropriately supported	3.67	3.44***

C & H Connections Advising Facilities Pre-Clin Mistreatment Feedback Clinical **Wellness**

** = p<0.01
*** = p<.001

Summary

- Success in efforts related to advising, facilities renovations, aspects of preclinical curriculum changes
- Overall positive response to Connections Days, C & H
- Awareness of mistreatment policy/process needs further improvement
- Revamp of GLIC/medical student role and consistency within clinical curriculum has potential for broad impact



Next Steps/Timeline

- Draft report with raw data available next week
- Final report available by end of December

Students are eager to continue to dig through data, brainstorm solutions, and implement initiatives to address issues identified



Indiana University School of Medicine Committee Report Template

Please submit this report to Rebekah Bredenbeck at rdbreden@iupui.edu.

Committee Name: Lecturers and Clinical Rank Faculty Promotion

Committee Chair Name: Edward Liechty, MD

Committee Chair Email: eliecht@iu.edu

Meeting Frequency: Twice a year on Thursday, all day

What is the mission of your committee? (100 words)

Committee members are to be familiar with school and campus promotion requirements, to be prepared to review 20 to 60 faculty dossiers and to serve as primary or secondary reviewers for the dossiers assigned to them by the committee chair. Dossier review includes a written review and a presentation to the committee. Following the presentation, a vote for promotion takes place. Both primary and secondary reviewers then submit their reviews with comments from the committee so the committee chair can write a formal letter for the dossier.

What has your committee accomplished this year? (250 words)

Twenty-seven dossiers were submitted and reviewed. Twenty-six candidates were approved for promotion with one candidate denied.

In addition, fifty-eight invitations were made to clinical track and lecturer faculty offering a preliminary mini review. One faculty member submitted material and received feedback.

Five faculty were recommended for promotion to Clinical Professor, Twelve to Associate Clinical Professor, one part-time to Clinical Associate Professor, and 1 full time affiliate to Clinical Professor.

Four faculty from regional campus' were voted to Adjunct Clinical Associate Professor, while three volunteer clinical faculty were reviewed and approved for promotion, one to Volunteer Clinical Professor and two as Volunteer Clinical Associate Professor.

In terms of diversity and ethnicity of these faculty recommended for promotion, six are female, five are Asian, and one is African American.

What goals does your committee have for the next academic year? How can the Faculty Steering Committee help you to accomplish those goals? (150 words)

No new goals discussed for the upcoming year.

**Indiana University School of Medicine
Office of Faculty Affairs and Professional Development
Women's Advisory Council**

A position statement on legislative interference and targeted regulation of women's health and reproduction.

In 2015, when the Religious Freedom Restoration Act was passed by Governor Pence, Indiana University School of Medicine (IUSM) stood with Indiana University (IU) in unapologetically denouncing the legislation, taking the position that legislating discrimination on the basis of sexual orientation was antithetical to the mission and values of our institution.

In March 2016, Governor Pence signed HEA 1337, a bill that criminalizes the provision of safe, legal medical care to women seeking abortion for any prenatally diagnosed disability or other fetal characteristics, such as gender or race. The bill also mandates cremation or burial for tissue and may create criminal penalties for investigators obtaining fetal tissues for research purposes. This piece of legislation is arguably more intrinsically tied to the mission and values of the institution, as it has direct impact on the doctor-patient relationship; scientific inquiry; education and training; and safety and quality of women's care. Nevertheless, in marked contrast to the RFRA response, the University or IUSM has not taken a position with regard to the detrimental implications that this legislation has for medical education, clinical research, recruitment and retention of talented faculty, and maternal morbidity and mortality throughout the state.

This statement is intended to encourage the faculty and administration of IUSM to oppose this and all future legislative efforts that interfere with physician's ability to provide evidence-based, safe and effective care to their patients; to convey comprehensive, factual, and medically sound advice and treatment options to their patients; to maintain ethical and professional obligations to their patients; to provide unbiased, nondiscriminatory care for their patients; or to keep their patients out of harm's way. More specifically, this statement urges the faculty, the administration and institution to denounce HEA 1337 on the basis of the following concerns:

Commented [BTE1]: Should I change to "to provide patients the course of treatment that would minimize morbidity and mortality"

- I. HEA 1337 interferes with the physician's ability to provide pregnant patients with the basic standard of care available in the US.
- II. HEA 1337 discriminates against women by targeting reproductive health care decisions.
- III. HEA 1337 creates barriers to discovery and innovation and potential criminal penalties for researchers.
- IV. HEA 1337 creates barriers to accessing care that will have a disproportionate impact on low income women, potentially creating greater health disparities.
- V. HEA 1337 impacts our ability to recruit and retain women of reproductive age and/or their family members to Indiana University/IUSM and the broader Indiana provider community.
- VI. HEA 1337 impacts our ability to recruit Maternal Fetal Medicine specialists and other women's health specialists who feel that they cannot safely provide the highest quality and standard of care for their patients without facing the threat of criminal penalties.
- VII. HEA 1337 impedes our ability to train residents and medical students in the full spectrum of counseling and care legally and medically available to women in the US. Not only does this create a

substandard educational experience for our trainees, it also has lasting implications for the health and wellness of the population of women they go on to serve after training.

Any exclusion of appropriate, legal medical care for female employees, students, and trainees is unethical practice, is discriminatory, and contradicts the values and mission of IUSM. This statement confirms commitment of IUSM to its faculty, students, and the citizens of Indiana to assure access to equitable health care for all.

Support points and sources

1. [ACOG Committee opinion no. 612: Abortion training and education.](#)

Committee on Health Care for Underserved Women.

Obstet Gynecol. 2014 Nov;124(5):1055-9. doi: 10.1097/01.AOG.0000456327.96480.18.

2. [Legislative interference with the patient-physician relationship.](#)

Weinberger SE, Lawrence HC 3rd, Henley DE, Alden ER, Hoyt DB. N Engl J Med. 2012 Oct 18;367(16):1557-9. doi: 10.1056/NEJMs1209858. No abstract available.

3. [Experiences Accessing Abortion Care in Alabama among Women Traveling for Services.](#)

White K, deMartelly V, Grossman D, Turan JM. Womens Health Issues. 2016 May-Jun;26(3):298-304. doi: 10.1016/j.whi.2016.01.003. Epub 2016 Feb 17.

4. [Women's experiences seeking abortion care shortly after the closure of clinics due to a restrictive law in Texas.](#)

Fuentes L, Lebenkoff S, White K, Gerdts C, Hopkins K, Potter JE, Grossman D. Contraception. 2016 Apr;93(4):292-7. doi: 10.1016/j.contraception.2015.12.017. Epub 2016 Jan 6.

5. [Recognizing conscience in abortion provision.](#)

Harris LH. N Engl J Med. 2012 Sep 13;367(11):981-3. doi: 10.1056/NEJMp1206253. No abstract available.

REPORT FROM THE AD-HOC COMMITTEE ON STUDENT SUCCESS

Analysis and Recommendations Regarding Potential Solutions for Increasing Student Success at
the Indiana University School of Medicine

November 2016

Submitted by Alvaro Tori, MD, FAAP. (Committee Chair)

(Manuscript edited and approved by committee)

Membership

Dr. Alvaro Tori (Asst. Dean Diversity Affairs), Chair
Alison Banta (Staff Member, Department of Emergency Medicine)
Dr. Bart Besinger (Student Promotions Committee and Faculty Assembly)
Vicki Bonds (Director of Health Professions and MSMS program)
Dr. Taihung (Peter) Duong (Assoc. Dean Admissions, Terre Haute Center Director)
Dr. Antwione Haywood (Asst. Dean Medical Student Education)
Gerard Hills (Student Representative)
Dr. Abby Klemsz (Asst. Dean Academic Advising)
Dr. Regina Kreisle (MK Competency Director, West Lafayette Center Director)
Meagan Senesac (Senior Business Intelligence Analyst, Dean's Office)
Sylk Sotto (Vice Chair of Faculty Affairs, Department of Medicine)
Dr. Chemen Tate (Admissions Committee, Diversity Council)

Administrative Support provided by Mrs. Carlie Turner
Graduate Assistant support provided by Jacqueline Mac and Mrs. Sacha Sharp

Executive Summary

During late August 2016, the Indiana University School of Medicine Faculty Steering Committee formed the Student Success Ad-Hoc Committee (SSAC) for purposes of exploring medical student success and factors that negatively impact that success. The Steering Committee specifically charged SSAC to define student success, explore whether underrepresented minority students had different levels of success as defined, and propose interventions based on evidence to improve all medical student success. This report is the deliverable which encompasses those charges.

The Student Success Ad-Hoc Committee met throughout the Fall 2016 semester to define student success and identify areas that significantly impacted success. Three general areas of impact were identified and were the focus of the committee's work. The SSAC defined student success as "*A measure of medical school education that reflects the strength of the student's credential for graduation, for successfully matching into residency, or for securing an intended career after graduation.*" The three identified areas of impact were admissions and pre-matriculation, academic promotion and graduation, and educational environment. The committee also identified subsets within the academic promotion and educational environment categories which included *matching and graduation* and *psychosocial factors and mistreatment*.

Predictive models were developed using admissions and matriculation data. From the predictive model, it was concluded that very few prematriculation factors impacted success. The most important early predictor of success was student performance in the first year. Prematriculation factors that were associated with poor performance in the first year and on the United States Medical License Examination (USMLE) Step 1 were; age 25 years or older at matriculation, identification as Hispanic, and a low MCAT physical science score. Interestingly, the three identified prematriculation risk factors did not play a role in success as matriculation continued.

Recommendations stemming from the research and pre-matriculation data are that IUSM:

1. Adopt a Head Start Summer Prep Session
2. Institute Racial/Ethnic Diversity Programs
3. Hire a Business Intelligence Analyst
4. Integrate Curriculum Better
5. Continue Research and Evaluation

Academic promotion was defined as a medical student's ability to progress through the program with passing scores. For this category, the committee examined academic data such as graduation and retention rates, course exam failures, and matching data. Additionally, the committee explored factors such as familial support and access to relevant mentoring and professional development. Based on the research and data examined the following recommendations were suggested:

1. Develop Test Taking Strategy Sessions
2. Have a System for Providing Step1 Resources
3. Enhance Advising and Tutoring System
4. Develop Practice Exam Vouchers

5. Create a Policy for Budget Adjustment
6. Track Use of Learning Resources
7. Provide Tuition for Leap Year
8. Have Two Year Masters Degrees

When examining medical student educational environments, the committee considered aspects of psychosocial factors and mistreatment. The research suggests that medical students experience burnout and distress that negatively impacts their success. Further, medical students, especially underrepresented minority students, experienced mistreatment in the form of physical intimidation, public belittlement, and racial and gender discrimination. In addition to the research, IUSM data confirms that students in the medical school are experiencing mistreatment from faculty, residents, and peers. The following recommendations were developed to address educational environments:

1. Curricula Considerations
2. Socialization Support Development
3. Faculty and Professional Development
4. Zero Tolerance Policy
5. Mistreatment Reporting Structure Enhancements
6. Family Orientation and Programs
7. MSE Funding

The recommendations developed stemmed from research about the experiences of medical students overall, and research pertaining to IUSM medical students specifically. Three categories emerged when the SSAC reviewed IUSM data, and those categories were admissions and pre-matriculation, academic promotion and graduation, and educational environment. Of the recommendations developed, the overarching consensus was that an EAD of Diversity position should be created to ensure recommendations are made a priority within the school, all programs recommended should be instituted statewide, and more time should be devoted to issues related to student success. Finally, recommendations for future research have also been put forward to give the Faculty Steering Committee and Dean Hess ideas about what else could be done to impact and hopefully support the success of IUSM students.

Introduction

In August of 2016, the Indiana University School of Medicine (IUSM) Faculty Steering Committee formed the Student Success Ad-Hoc Committee (SSAC) to investigate the state of student success at IUSM based on findings derived from existing in-house data and situates these findings against existing literature on factors influencing medical student success. The Faculty Steering Committee found that although there were several parallel conversations occurring across campus on a multitude of data related to students repeating or failing courses, and/or not matching a residency opportunity, a formalized system-wide review of the data had not been completed. More specifically, upon reviewing student promotions data, residency match data and data from the AAMC Graduate Questionnaire, the Faculty Steering Committee identified student success questions that required a closer look. While it might be assumed that underrepresented students needed additional attention, the SSAC was created to determine if this was in fact the population of students that required additional focus and what other recommendations to support all student success could be concluded based on data and literature in the field. As a requested deliverable from the SSAC, this report provides an overview of the committee's charge, timeline, and process, followed by a discussion of the relevant data points and issues, as well as recommendations.

Ad-Hoc Committee Charge and Timeline

The first SSAC meeting took place on August 24th 2016. In that meeting the committee was charged with a) defining student success, b) exploring the success of underrepresented students based on these definitions, and c) proposing interventions based on evidence to improve student success. Further, several questions for consideration were provided to give the SSAC direction for how to conduct the investigation. Those questions are as follows:

- Are there identifiable admissions predictors of a student's failure later in medical school?
- Why are our URM students failing at higher rates compared to white students?
- Are there early medical school predictors of students who fail more than one course or clerkship?
- Are our standards for academic probation outside of the norms for other medical schools?
- How early can we identify students that will fail more than 1 course or clerkship? What are the predictors of such failures? How does this failure rate compare to other schools?
- Do we need to offer more advising and tutoring about how to study/ learn more effectively?
- Can we predict which students will not match into their chosen specialty or not match at all?
- Should there be a maximum number of years that students can stay at IUSM without earning a degree?
- How many years of medical school should IUSM students be expected to pay full tuition?
- Should a master's degree be offered to students who have successfully completed their foundational science curriculum, but cannot fulfill all the requirements to receive their

MD degree?

- How does our attrition data compare to other similar medical schools?
- What are the exemplar programs at other medical schools that have increased URM student success?
- What does the literature tell us regarding how best to address the issues identified? What is the evidence behind possible programs and services that might help us improve student success?

A requested outcome of the committee work is a report to be submitted to the Faculty Steering Committee and Dean Jay L. Hess. Further, the goal was to have the report received by the end of November so that any recommendations and or interventions could be included in the next budget cycle. Dr. Alvaro Tori, the SSAC Chair, also suggested that a follow-up or review of any programs and or policies recommended in the report be conducted to assess the achievement of the goals set forth by the committee.

In the following sections, information regarding how the SSAC approached reviewing the data and arrived at conclusions related to recommendations will be discussed, as well as the SSAC's overall recommendations will be made known based on evidence from the data.

General Considerations and Approach

Upon being charged as a SSAC, there were several considerations for how to approach the creation of recommendations related to student achievement. The following questions/comments were developed during the first meeting:

- Developing recommendations is not as simple as just reviewing data.
- There are other indicators for why students learn and can overcome adversity.
- We will have the opportunity to interview students.
- What assumptions do we bring to the table? Identify any bias.
- What problems are anticipated? (i.e. Data is "homegrown", lots of transition in offices where data is housed)
- How does the institutional culture of IUSM impact student performance?
- What are the implications for having a diverse class of students?
- Is there a need for racial equity and cultural competence programs?

Before data analysis could begin, the SSAC needed to identify a formal definition for student success. Taking into consideration certain success indicators, such as academic performance, graduation, matching into residency, and the review of literature defining student success in medicine and higher education, the SSAC agreed to the following definition of student success, Kim-Prieto et al.¹ definition of student success as a foundation:

Student Success: A measure of medical school education that reflects the strength of the student's credential for graduation, for successfully matching into residency, or for securing an intended career after graduation

This definition is the impetus on which the findings and recommendations of this report are based. The SSAC began a reflexive process of examining existing internal data, discussing committee member observations, reading relevant literature, and categorizing the learning from these activities into three areas: (1) admissions and pre-matriculation, (2) academic promotion, and (3) educational environment.

In early October, the SSAC agreed to form three subcommittees in those areas to conduct deeper exploration into supporting internal data and external literature, and generate substantive recommendations impacting that specific area of student success. The full SSAC reconvened in mid-October when subcommittees shared reports providing specific IUSM data, external literature, recommendations, and future research needs. A cohesive draft report was compiled and shared with the SSAC prior to the meeting on November 7, where additional gaps, edits, and changes were suggested. Edits were made, and a final draft of the report was approved by the committee in late-November. A final report was submitted to the Faculty Steering Committee on November 30, 2016.

It is important to note that during the time the SSAC convened, the IUSM Strategic Diversity Framework, which outlines the importance of diversity in the work of IUSM and provides direction for future endeavors, was approved at multiple levels of IUSM leadership. The Framework identifies IUSM defined diversity categories as Black/African American, Hispanic/Latino, and trainees committed to practicing in rural Indiana. These groups were identified as underrepresented in the state of Indiana. While the scope of the SSAC is to examine all student success, specific attention was given to these school defined diversity categories in every part of the process.

Discussion of Literature and Data

Given the student success definition developed by the SSAC, research began in three areas of student performance and concern for the development of recommendations: (1) admissions and pre-matriculation, (2) academic promotion as it relates to matching and graduation, and (3) student educational environment, which includes psychosocial factors and mistreatment.

Admissions and Pre-Matriculation

The committee examined admissions and matriculation data and created predictive models using these factors to predict the following areas of success: entering class attrition, academic promotion from year 1 to year 2, and the likelihood of scoring above average on the Step1 examination, obtaining an Isolated Deficiency in Medical Knowledge (ID-MK) in 3rd year, and 3rd year above average GPA.

Predictive Models

After evaluating multiple predictive models, graduation, and attrition data, we found very few pre-matriculation characteristics that could negatively or positively influence student success as defined by the committee, which includes graduation, obtaining a National Resident Matching Program (NRMP) match, and student performance. Suggesting pre-matriculation differences between admitted students had little impact on the ability of a student to succeed at IUSM. There were no pre-matriculation data found that could be used to predict the likelihood of graduation.

Therefore, we focused attention on student performance measures that were found to impact graduation and had the potential to impact NRMP success.

In reviewing the data, we agreed that class rank and therefore grade point average in the first and second years influence NRMP potential.² The matriculation data also showed a relationship between 1st year GPA and USMLE Step 1 (Step1) performance. A review of Step1 scores, 3rd year clerkship grades, and failures show that students who performed poorly in these areas, were less likely to graduate. We also agreed that Step1 scores and clerkship performance could also have a significant impact on student NRMP success.²

As a next step, the committee sought to identify characteristics that could place students “at-risk” for performance, Match, and graduation failures. Creation of an “at-risk cohort profile” could be used as an early identification, active monitoring, and intervention system in order to improve academic performance, Match, and graduation rates for IUSM students. Data from the following performance measures were used to identify factors that serve to identify at-risk students at IUSM:

1. **Promotion to the 2nd year of medical school with entering class.** Attrition is defined as a student withdrawing from the school, being academically dismissed, repeating their first year, or taking a leave of absence.
 - a. Non-traditional students, age 25 or greater at the time of admission, had the greatest association with attrition.
 - b. Students who self-identified as Hispanic have higher risk of attrition.
 - c. Students with an MCAT physical science score of 7 have higher risk of attrition

2. **Obtaining above average Step1 score.** The chances of an IUSM student scoring above the national average (232) on their Step1 exam on their first attempt. Admissions data and GPA at the end of the student’s first year at IUSM could determine the chance that a student would perform successfully on this exam. It is important to note that students can still pass Step1 while scoring below 232. Pre-matriculation data accounted for about 50% of the predictive model (with first year GPA being the other variable).
 - a. Student 1st year GPA had a near linear relationship with Step1 performance. First year GPA has almost a 50% effect on Step1 success. That indicates that pre-matriculation data has a much smaller effect on Step1 exam success than it did in first year promotion
 - b. Initial matriculation at the Terre Haute campus had a negative effect on Step1 performance.
 - c. Identification as Hispanic, Spanish, Latino(a) negatively affected Step1 performance.
 - d. Age 25 or older at admission negatively affected Step1 performance.
 - e. Students whose legal state of residency was California at the time of admission negatively affected Step1 performance.

3. Obtaining at least one ID-MK.

- a. Students identified as Black/African-American, Hispanic/Latino(a) were 20% more likely to receive an ID-MK
- b. 1st year GPA again showed a more linear relationship with ID-MK performance. Lower GPA correlates with higher risk of ID-MK.

4. Above average 3rd year GPA

- a. Identification as Black/African-American negatively affected chances of achieving above average clerkship GPA.
- b. Identification as Asian negatively affected chances of achieving above average clerkship GPA.
- c. 1st year GPA again had a more positive correlation with above average 3rd year GPA.

The predictive models, admissions, and matriculation data as well as graduation and attrition data led us to conclude student performance in the first year is the most important predictor of student success. Further, students 25 and older, identification of Hispanic, and low MCAT PS score negatively impacts success in the first year and performance on Step1, yet do not play a role as matriculation continues. While identification as Black/ African American does not negatively affect first and second year performance nor Step1 performance, it does negatively affect 3rd year performance measures, class rank in the fourth year, match success, and graduation. Thus, suggesting there are environmental factors affecting the ability of these students to succeed. A larger discussion of educational environment will be had in a later section of this report. Finally, based on these data we propose students with one or more of the following characteristics be identified for additional support while at IUSM (*as a caveat: because these students were identified as needing additional support does not infer additional support is needed in all cases. We propose that support systems be made available to students with these characteristics, but we do not encourage viewing all students with these characteristics from a deficit perspective*):

- Black/African-American students
- Hispanic/Spanish/Latino(a) students
- Students age 25 or older at admission
- Students with below average performance in the first year
- Students admitted with an MCAT PS of 7 (or equivalent)

Understanding these factors that may negatively impact student promotion is important and drives the motivation to provide impactful interventions designed to help students succeed. It is important to note that this data suggests that our institution does play a significant role in the academic success of students and developing positive, impactful interventions to implement upon matriculation of this group of students should be warranted instead of using this data as a screening tool during the admissions process.¹²

Academic Promotion, Matching and Graduation

Academic promotion in the committee is defined as a medical student's ability to progress through the program with passing scores. Further, said student has the capacity to pass all exams and move into the matching phase of the program with competitiveness. The committee examined available academic data, such as graduation and retention rates, course and exam failures, as well as matching data. This data was examined for specific impact on school defined diversity categories as well. Further, the committee examined factors, such as familial support and access to relevant mentoring and professional development, which contribute to student success.

Course, Exam, and Clerkship Failures. Our internal IUSM data denotes that our most recent 2015 matriculants experienced 41 instances of course failures in the first year which is increased from previous data in 2013 showing 32 instances of course failures within the first year (Appendix 1: Figure 1). A trend from the 2011 (21%) through 2015 (42%) cohort of matriculants is showing an increasing proportion of all course failures in Year 1 to be failures in multiple courses. The percentage peaks for the 2013 cohort at 53% (Appendix 1: Figure 2). Course failures in gross anatomy comprised an average of 30% of all single and multiple course failures from 2011-2015. Course failures in physiology (14%) and biochemistry (13%) comprised the next highest percentages of all course failures from 2011-2015 cohorts (Appendix 1: Figure 3). Important to note is that while there appears to be little correlation between academic failure of a single course in Year 1 and later academic difficulty (such as future course failures or failure in Step1), there is a clear correlation with multiple failures in Year 1 or academic difficulty in Year 2 (single or multiple course failures) and future academic failure.

Our internal data also shows an increase in the number of Step1 failures from 7 to 13 total from 2012 to 2013 cohorts. Interestingly, some of these students have not had any previous academic difficulty during their matriculation. It is important to ensure that all students are getting exposure to exam-like content and integrating their course work with clinical vignettes and problem based learning skills.⁴ Further, minority students are scoring above the national average at disproportionately lower rates compared to all non-minority students on Step1. For the class of 2017, 32% of minority students (n=39) scored above the national average (score=232) compared to 62% of non-minority students (n=305). For the class of 2016, 33% of minority students (n=48) scored above the national average compared to 61% of non-minority students (n=295).

NBME exams failures are important to address as NBME exams predict performance on STEP 2CK (a IUSM graduation requirement).^{5,6,7} A published study showed "linear correlations were found between the Clinical Exam Skills (CES) and USMLE Step2 and the obstetrics/gynecology final. Students with a poor CES (<10th percentile) had lower USMLE Step 2 (Step2) scores, (188.2 vs. 206.3) and more examination failures as well as both lower obstetrics/gynecology final examination scores and more clerkship failures".⁸ Another study showed positive linear correlations between the Step1 and Step2 scores with both the Family Medicine Final (FMF) scores and Clinical Exam Skills (CES). Students failing the Step1 or with a CES less than the 10th percentile were more likely to fail the FMF as well as the family medicine clerkship.⁹

Moreover, NBME exams failures lead to ID-MKs, which is denoted on the transcript and reviewed by residency programs when deciding their interview invitations. The 2014 NRMP Program Director survey notes that grades in required clerkships are considered 4/5 in level of

importance for the selection of students for an interview.¹⁰ This was cited by 70% of programs. However, the importance of the required clerkship grade decreases after being awarded the interview with 50% of programs citing it 4/5 importance when developing a rank list.¹⁰ At IUSM, of the 41 students in the 2012 cohort who received an ID-MK and/or failure, 3 students failed Step1, 15 previously failed a course, and 6 previously repeated a year, while 26 had no previous academic failures. The incidence of negative impact of third year course failures on matching may increase if the student failed the shelf exam in the field of medicine in which the student decides to apply.

When disaggregating academic difficulty data by student race and ethnicity, Black students comprised a higher percentage of academic failure compared to their enrollment percentage in the cohort across all cohorts 2011 to 2015. The same is true for Asian students in the 2011 and 2014 cohorts and Latino students in the 2013 and 2014 cohorts (Appendix 1: Figures 4 & 5). For the 2011 and 2012 cohorts, Black and Asian students comprised a higher percentage of ID-MKs compared to their enrollment percentage (Appendix 1: Figure 6).

When examining data specific to minority students, Black and Latino students at IUSM performed below the margins in clinical skills and standardized test performance. A higher percentage of Black students in the 2011, 2012, and 2013 cohorts failed Step1 compared to their enrollment percentage for those years (Appendix 1: Figure 7). In the 2015-2016 academic year, minority students comprised 34% (n=21) of the clerkship failures and isolated deficiencies. In the 2016-2017 academic year, minority students comprised 50% (n=5) of the clerkship failures and isolated deficiencies. Of the class of 2016 students who failed OSCE, 30% (n=9) were Black or Hispanic students. Of the class of 2016 students who failed OSCE, 23% (n=7) were Black or Hispanic students.

About Step 2 exams, the importance of learning test taking strategies in the setting of clinical reasoning has been well documented. It was noted in a study published in the journal of graduate medical education that CR (clinical reasoning) strategies and TT (test-taking) behaviors were identifiable factors that contribute to success on the Step2 CK exam. "Individuals with low performance on Step 2 Clinical Knowledge demonstrated increased premature closure [of questions] and increased faulty knowledge, and showed comparatively less ruling out of alternatives [answer choices] or admission of knowledge deficits."⁴⁰ High performers on Step 2 Clinical Knowledge demonstrated increased ruling out of alternatives and admission of knowledge deficits, and less premature closure, faulty knowledge, or closure prior to reading the alternatives."⁴⁰ Another study performed at the University of Missouri Columbia School of Medicine found that using clinical reasoning in a problem based learning environment led to higher Step1 and Step2 CK scores above the national average. This indicates the need of a faculty member (preferably a USMLE test writer) who can help develop clinical reasoning and test taking skills for our students and provide insight into the construction of an USMLE question.⁴¹ These sessions can be done in a problem based learning (PBL) format as well which has been shown to improve USMLE exam scores.⁴

Match, Graduation & Retention Rates. Overall, IUSM students are not matching at rates comparable to the national average. In 2015, 9% of IUSM students did not match, compared to 6.1% of all students. In 2016, 12.2% of IUSM students did not match. However, IUSM minority students comprised of 43% (n=6) of unmatched students in 2015 and 44% (n=7) unmatched students in 2016.

Examining the retention and graduate rates of the class entering in the 2011 academic year, the committee found that students from minority backgrounds are not persisting and graduating at the same rates as all students (Appendix 2, Figure 1). Similar rates were found when examining the retention and graduation rates of first generation students. For example, while IUSM retained 92.9% of minority students in Year 4, only 61.9% conferred medical degrees, compared to 81.3% of all students entering in 2011 (Appendix 2, Figure 2).

Programs Facilitating Success. Numerical data provides one side of the story. Therefore, the committee was interested in exploring literature in order to determine what programs and interventions facilitated student success. The committee then explored how to increase effectiveness of the programs IUSM currently offers. Specifically, the committee examined literature related to mentoring and career development, initiatives supporting mental health well-being, family support, and financial considerations.

Mentoring and Career Development Support. IUSM recently implemented the Mentoring & Advising Program (MAP) to support medical students in career development. Such implementation is a monumental step forward in our approach to the success of all our medical students. The Office of Diversity Affairs is championing initiatives to ensure that advising faculty are great mentors and culturally sensitive.^{11,12,13} With our increasingly diverse student body, the faculty mentorship will not immediately reflect the diversity of the student body. It becomes important for faculty mentors to provide opportunities for all students that will help minority student success as well.^{14, 15,16,17} “Academic and social integration appear to be critical to the success of African American STEM majors, including highly able students. Black students are more likely than White and Asian American students to experience both academic and social isolation on majority White campuses and in science majors. Contact with faculty outside the classroom and mentoring relationships with faculty can decrease academic isolation and contribute to positive outcomes. Additionally, a critical mass of highly able Black peers can enhance academic and social support and reduce perceptions of racism—contributing to persistence and success in STEM fields”.¹⁶ Culturally sensitive mentoring is a well documented practice and has been shown improve the retention of minority students in STEM fields.^{16,18,12,17,19} Intentional mentoring programs prove to be effective on long term student success. For example, students paired with research advisors in the Meyerhoff Scholars Program at UMBC successfully matriculated into and completed MD/PhD programs.³² The program used the model “like produces like,” meaning that research mentors will beget more researchers and physician mentors will produce more physicians.^{18,19} Our mentors can help students gain early clinical and research experiences. This may prove beneficial for all our IUSM students as early clinical experiences have been shown to improve academic performance of medical students.²⁰

Mental Health Well-Being. IUSM took steps to increase student mental well-being by making amendments to the curriculum. First, shifting to a pass/fail grading system can decrease student stress during medical school.²¹ A recent article describes how moving to a pass/fail grading system is “found [to have] a reduction in perceived stress and an improvement in overall well-being, group cohesion, and satisfaction with the quality of medical education”.²¹ It was also shown that a “multi-institutional study involving seven medical schools found higher levels of stress, emotional exhaustion, and depersonalization in schools that used grading schemes with three or more levels, compared with schools that used pass/fail grading”.²¹ IUSM has also

implemented more problem based learning opportunities, which are associated with “less perceived distress (defined as depression, somatic complaints, hostility, and anxiety)”.²² The effects of stress on academic performance in medical school is well known problem. Some literature describes how medical students have higher rates of depression than their same age group in the general public. 11.2% of medical students in a multi-institutional study noted that they had experienced suicidal ideation in the past year. Medical students across the country display high levels of anxiety and burnout.²²

We have unfortunately experienced the negative impacts of stress at our own institution with the untimely deaths of some of our students in the past few years. It is therefore important to quickly identify struggling students and get them mental health support as they prepare for high-stake exams. A study from the Academy of Medicine generated data that “[demonstrated] that depression among medical students may be under-treated. Medical schools can assist depressed students by addressing issues such as the stigma of using mental health services, confidentiality, and documentation. Early treatment of impaired future caregivers may have far-reaching implications for the individual students, their colleagues, and their future patients.”²³ This means that we should recommend these services proactively because it is likely that the student will not seek out this service on their own.^{24,25} Often a life-crisis can develop and the medical student is deeply impacted by the event rendering them unfit to perform well academically.²⁶

It is important to also note that struggling learners may have some underlying cognitive processing issue or test anxiety that has persisted throughout childhood and now presented as a problem with the volume of information.^{15,28} This is not a learning disability but a processing issue that can be resolved with cognitive rehabilitation that can coincide with ongoing coursework.

Family Engagement. IUSM currently hosts a family orientation during student orientation at the start of the school year for incoming first year students. Family engagement is a well described concept in the literature regarding recruitment and retention of minority and first generation students at the college level, but less is written about the impact at the professional and graduate level. There are, however, some transferrable components. Minority students from various cultural backgrounds experience “tug of war” between fighting to save familial support (by staying involved in family affairs) and test/assignment preparation.^{1,3,26,27,45,49} African American students who have strong family support during matriculation have a higher chance of completing the degree and selecting careers that serve the community.^{1,3,7,45} Culturally sensitive programming at academic institutions is important for the retention of minority students particularly men of color.³¹

Expert opinion from Dr. Alfredo Gonzales, Professor and Dean Emeritus of California State University and director of the Parent Academy Program, asserts that due to lack of familiarity with college going, there is limited support that Latino family members can provide their college attending family members¹⁶. He suggests the implementation of “robust parent/family programs, not merely provide *parent orientations* or sponsor parent associations [because] such programs must provide information that helps parents and family better understand the college experience of their children, what it takes to be a successful college student, and the kinds of things that they can do to help their children be successful.”^{16,34}

This family program model is being used at the University of Maryland Baltimore County (UMBC), a highly recognized institution for their retention of minority students in

STEM fields.^{32,48} Data from the Graduate School Council noted that 2015 minority PhD graduates found that family support factors into 79% of their success in completing the PhD program.^{51,52} This suggests that there is persistence in the need for family support for minority students at the graduate school and possibly the professional school levels.^{46,47,51,52} The significant take-away is that family programs of this nature have improved retention of minority and first generation college students in their respective institutions.¹⁷

Student Indebtedness. The current IUSM Student Handbook states “students who are required to repeat any academic work previously attempted will be assessed for another year at the current rate.” According to Jose Espada, IUSM Financial Aid Director, “the highest indebted students (top twelve indebted students before we have a white student) at IUSM are Hispanic and African American students. Overall, our 39 minority students graduating this year had an average of \$211,357 compared to the \$194,000 among our majority students” (Appendix 3). Taken together with our knowledge of our minority students’ retention/graduation data and this financial data, it is possible that our students who repeat years of school are minority students and their debt is negatively impacted. Additionally, “out of state” students will also accrue even larger costs for the extra year and additional interest per month significantly increases the overall debt load upon graduation. Currently, students who take a leave-of-absence at the end of the second semester can repeat the year without paying additional tuition; yet, students who failed during the second semester and are allowed to repeat a year are being charged. We do not wish to build the perception that the student is being penalized financially for struggling academically.

Masters Degree Options. A number of medical schools are conferring degrees to students who do not wish to complete the four-year degree. The students who successfully complete two years of medical school are at times required to develop a research paper or thesis in order to receive the Masters of Science in Medical Sciences or Biomedical Sciences. This is an alternative for students who withdraw (who may or may not be dismissed or a struggling learner) with large amounts of debt and no comparable degree to find a healthcare related job to pay down the debt. Harvard Medical School, Temple Medical, Tulane Medical School, the University of Michigan Medical School are among some institutions currently providing alternative degree options. Students with these Masters degrees have viable career options (Appendix 4).^{28,29}

Educational Environment

When assessing medical student learning environments, the SSAC considered both aspects of mistreatment and psychosocial factors that can contribute to or inhibit learning. Below we discuss mistreatment and psychosocial factors that influence educational environments and relation to student success.

Psychosocial Factors. Psychosocial development relates to both psychological and social aspects of a student’s life. Theorists who study psychosocial development want to understand how students make decisions about important issues, how they define themselves in relationships with others, and ultimately what they do with their lives³¹. There are several theories associated with psychosocial identity development and how educational environments influence development for college students. Theories such as Erik Erikson’s Identity Development, James Marcia’s Ego Identity Statures, and Chickering’s Developmental Vectors and Educationally

Influential Environments are foundational theories from which newer theories are based³¹. While there is little research that discusses how psychosocial environments influence development for medical students, literature pertaining to college students overall, in addition, can be helpful for understanding the psychosocial factors that contribute to medical student success.

While each of the three foundational theorists previously mentioned discuss psychosocial development, Chickering's work explicitly explains how educational environments influence development. According to Patton et al., Chickering argued that the educational environment exercises powerful influences that can support or neglect a student's psychosocial development. Those influences are institutional objectives, institutional size, student-faculty relationship, curriculum, teaching, friendships and student communities, and student development programs and services. Moreover, in a revision of the of his theory, Chickering provides admonitions that further emphasize how powerful educational environments are – integration of work and learning, recognition and respect for individual differences, and acknowledgment of nature of learning and development. Overall, it is important to recognize how the educational environment influences introduced by Chickering impact a student's psychosocial development in positive and negative ways.

Medical students face significant academic, psychosocial, and existential stressors throughout their medical education training. Burnout and student distress have been found to affect up to 50% of medical students³². Additionally, school stressors like sleep deprivation, hidden curriculum, and student abuse can impact a student's well-being and psychosocial development. Dyrbye et al., performed a multicenter study and found that the medical school learning environment independently related and a critical influence on student burnout. The environmental characteristics strongly tied to burnout were dissatisfaction with learning environment, level of support from faculty, cynical residents, and clerkship organization. Regarding minority students, a study found that students experienced less supportive learning and social environments due to being victims of discrimination and racial harassment. Minority students reported feelings of invisibility and/or being perceived as inferior.³³ Consistently, minority students participants were found to experience stereotype threat or concerns with being perceived as demonstrating a stereotype. Finally, research also found non-traditional aged students to struggle in educational environments. Because non-traditional students often have commitments outside of school that add to their distress, they find educational environments lack the resources and support systems to accommodate their needs.³¹

Mistreatment. Student reports of mistreatment in medical school are nothing new.^{34,35,36} According to the Association of American Medical Colleges (AAMC) mistreatment either intentional or unintentional occurs when behavior shows disrespect for the dignity of others and unreasonably interferes with the learning process. Cook et al³⁵ assert, mistreatment ranges from physical intimidation to public belittlement and humiliation to racial and gender discrimination. Further, students report perpetrators of mistreatment include nurses, staff, patients, and other students. Related to racial discrimination, research conducted by Beagan suggests that medical schools are sites of microaggressions, or acts that are additive overtime and convey disregard and disrespect of its recipients.³⁴ Consistently, Dyrbye et al.³⁶, found “that race is profoundly related to distress for individual minority students who experience discrimination, prejudice, or isolation related to the color of their skin” (p. 2107). Their research concluded that minority students were five times more likely to state race as adversely affecting their medical school experiences. Further, minority students are up to five times more likely to fail in the Step1 examination, four

times more likely to fail both Step1 and Step2 examinations, and less likely to graduate or complete medical school within four years compared with their peers. Moreover, research suggests that minority students have greater difficulty establishing a network of peer support and finding same-race role models and mentors. Importantly, unacceptable rates of reported racial discrimination also continue to exist⁸.

Medical student mistreatment is problematic both in its effects on the learning environment and its potentially harmful effects on student well-being and professional choices. Mistreatment correlates with poor emotional and mental health outcomes such as problem drinking, decreased self-confidence and self-esteem, and depression.³⁵ Additionally, mistreatment is associated with increased thoughts of dropping out of medical school, lower career satisfaction, and regret for having chosen the profession of medicine and burnout. Overall, mistreated students are less likely to plan careers in academic medicine, and some medical students may demonstrate symptoms of posttraumatic stress disorder following mistreatment.

The perception of being taken advantage of or abused is common (50-85%) among medical students in regard to mistreatment. Although verbal abuse is the most common problem in this category, institutional abuse (unfair grades, excessive workload, unnecessary grunt work, assignment of inappropriate task, physical abuse, sexual harassment and racial discrimination) are also serious problems. Further, the effect of abuse on students is serious. In one study of more than 500 medical students, more than 40% reported that they had personally experienced abuse, with many stating that the experience was a major source of stress that affected them for a month or longer. Regardless of year of training, verbal abuse seriously affected students' confidence and negatively affects the learning environment. Studies also suggest that verbal abuse influences students' specialty choice, adversely affects their care of patients, decreases institutional loyalty and erodes mental health. Anxiety, depression, hostility, self-esteem and use of alcohol to "escape" are common among students who perceive abuse. Despite this profound effect, less than one third of students report abuse to faculty or medical school administrators, often due to fear of reprisal or concern of potential repercussions on performance evaluations.³⁷

Between 2000 and 2011, 12% to 20% of the AAMC's annual Medical School Graduation Questionnaire (GQ)'s respondents nationally reported mistreatment, which represents 1200 to 2800 students per year. Public humiliation was the most commonly reported form of mistreatment. Among the students who did not report mistreatments, 48% indicated that they feared reprisal and 21% indicated that they were unsure of what to do.³⁸

Mistreatment at Indiana University School of Medicine (IUSM). Currently, at IUSM, several sources of data indicating the need to address mistreatment - the IUSM Tolerance Survey and the 2016 AAMC Medical School Graduation Questionnaire for IUSM. According to the 2016 AAMC Medical School Graduation Questionnaire for IUSM, compared to all students surveyed, IUSM students were less aware of mistreatment policies (89.4% IUSM compared to 95.7% nationally) and of the procedures for reporting mistreatment (70.1% IUSM compared to 82.3% nationally). Compared to the national average, IUSM students reported higher rates of experience with 12 of the 17 mistreatment behaviors. Those percentages are provided in Appendix 5 below.

Further, of those respondents who experienced public humiliation or embarrassment, the individuals at the source of those behaviors were indicated at higher rates compared to the national average: pre-clerkship faculty (3.0% compared to 0.8%), clerkship faculty - clinical setting (21.1% compared to 12.9%), another institution employee (2.3% compared to 1.0%), and

student (4.5% compared to 1.4%). Of those respondents who experienced other types of mistreatment behavior, all but one category of individuals at the source of those behaviors were indicated at higher rates compared to the national average.

Regarding the Tolerance Survey, a sample of 1,071 IUSM faculty, students, residents, fellows, and postdoctoral scholars were asked to indicate whether they experienced or witnessed public humiliation, private humiliation, threat of physical harm, physical harm, personal requests, unwanted sexual advances, or offers of sex in exchange for grades or other rewards. Further, respondents were asked if they experienced or witnessed discrimination against based on gender, race, ethnicity, sexual orientation, or religion. While no respondents reported witnessing or experiencing offers of sex exchanges, participants witnessed or experienced mistreatment in the other areas. According to the survey results 90 (25.6%) student respondents witnessed or experienced public humiliation, 83 (23.6%) student respondents witnessed or experienced private humiliation, and 28 (7.9%) student respondents witnessed or experienced personal requests. Pertaining to gender and race discrimination, 38 (10.8%) student respondents witnessed or experienced remarks about gender while 30 (8.5%) student respondents witnessed or experienced remarks about race. Refer to Appendix 6 for more data related to Tolerance Survey Transgressions.

Moreover, the Tolerance Survey found that faculty members were most often the perpetrators of transgressions and acts of discrimination. According to the data faculty comprised over half of the perpetrators in most incidents making up 60% for the proportion of public humiliation incidents, 70% of private humiliation incidents, and 55% of personal requests. Additionally, faculty made up 55% of the proportion of gender remarks and 56% of the proportion of race related remarks. See Appendix 7 for more details.

Reporting Mistreatment at IUSM. For institutions to understand, intervene and prevent mistreatment, students first must report it. A large majority of the data about mistreatment is derived from medical student's reports of such experiences. Thus, an essential quality for any effective reporting mechanism is safety. Students must be protected from retribution or retaliation for reporting mistreatment. Faculty must be protected from false accusations as the sources of mistreatment.³⁸

Of those students who indicated they experienced a mistreatment behavior (excluding "publicly embarrassed") on the 2016 AAMC Medical School Graduation Questionnaire, IUSM respondents reported at a significantly lower rate (12.9%) compared to the national average (20.2%). Those who experienced and report the behavior(s), reported the behavior to a mix of individuals and more likely than the national average to report to a designated counselor/advocate/ombudsperson (25.0% compared to 18.8%), other medical school administrator (37.5% compared to 23.1%), faculty member (50.0% compared to 44.5%), and/or other (50.0% compared to 22.0%). Reports to the Dean of Students was lower (25.0%) compared to the national average (27.1%).

When the respondent reported the behavior, they were more likely to be dissatisfied (25.0%) or very dissatisfied (50.0%) about the outcome compared to the national average (16.8% and 13.7% respectively), than to be satisfied (12.5%) or very satisfied (12.5%) compared to the national average (24.6% and 17.5% respectively). Higher percentages of IUSM respondents did not report the behavior due to reasons such as thinking that nothing would be done about it (38.7%), fear of reprisal (32.3%), or other (16.1%). These rates are higher than the national average, 36.0%, 27.1%, and 9.0% respectively.

Throughout medical school, 22.7% of IUSM respondents indicated they witness other students subjected to any of the mistreatment behaviors, which is higher than the national average of 18.4%. These respondents also reported these behaviors at a higher rate (16.7%) compared to the national average (11.1%).

Currently IUSM's office of Medical Student Education (MSE) has a form for students to report incidents of mistreatment, which can be found [here](#). Details regarding how mistreatment reports are handled are still being developed. Currently, the Teacher Learner Advocacy Committee, TLAC, provides a document that defines both unacceptable and inappropriate behavior yet gives different directions for how to report mistreatment. According to the TLAC document, students should report inappropriate behavior or mistreatment by emailing TLAC directly, thus removing the anonymity provided by the form previously mentioned. The process for how complaints are handled according to the TLAC document is in Appendix 8. According to the newly proposed mistreatment response and prevention system, TLAC will work in conjunction with the IUSM Ombuds Office to handle mistreatment. TLAC will be responsible for monitoring reports of mistreatment using a case management system, preventing mistreatment, and enhancing professionalism. TLAC will report cases to the Ombuds Office and other offices as necessary while also developing programming informed by those cases. The Ombuds Office will serve as a resource and impartial third party advocate. Members of the office will supplement existing administrative and formal dispute processes. Finally, the mistreatment system owner (currently Mary Dankoski) serves to monitor the overall effectiveness of the system.

Recommendations from the Literature. Important next steps for eradicating mistreatment include the clear declaration of intent across medical education, to provide, maintain, and support learning environments that are rooted in respect for all patients, learners, teachers, and team members. The most important efforts will be the creation of a vigilant and self-sustained culture across education, research and clinical networks that does not tolerate abuse of anyone. Institutions must also take responsibility to educate their faculty, staff, residents and students regarding the definition of mistreatment and to engage them in identifying ways to improve the institution's overall education culture.³⁸

Given the prevalence of mistreatment reported in medical school, Dyrbye et al.³⁶ suggest schools respond in the following ways, by:

- recognizing the impacts of race/ethnicity on student experiences and the high rates of distress associated
- reviewing performance evaluations of minority medical students for evidence of discrimination
- addressing and discussing issues related to discrimination and mistreatment with faculty and staff so to empower them to handle such complaints
- promoting collaboration among students from diverse racial and ethnic backgrounds
- providing a venue for discussing issues related to mistreatment
- promoting zero tolerance of racism and mistreatment among faculty and staff
- and, by creating an effective system for responding to and supporting students who experience racial discrimination and mistreatment

Recommendations

The following recommendations are based on institutional data, reviewed and complemented by national data. In addition, we support these recommendations with our literature review.

Overarching Recommendations

1. **EAD of Diversity.** The creation of a separate office or the elevation of ODA and the office's leader to an Executive Associate Dean position will provide the leadership level and structure that comes with a direct reporting line to the Dean, and also elevating the resources necessary to advance and address the needs of minority medical students. Currently, medical schools that are comparable to IUSM like University of Michigan, Yale University, Harvard University, Vanderbilt University, among others, have their Office of Diversity at an Executive level and many Associate Deans have more than 0.5FTE and even full time protected time.
2. **Make Programs State-wide.** Each of the programs recommended in this document should be made available to medical students state-wide. Further, programs should collaborate on efforts as well as share best practices.
3. **More Time.** More time should be dedicated to the complex issues related to medical student success. Additionally, this committee should reconvene at a later date to ensure recommendations are being implemented with effectiveness.

Admissions & Pre-Matriculation

1. **Adoption of a Head Start Summer Preparatory Session.** A summer program will be (1) highly recommended to those high attention students identified during admissions and (2) required of those students who are high attention based on their first-year academic performance. The prematriculation summer program will be open to all who are interested. Most of summer bridge models retain and graduate students enrolled in rigorous science programs. A study at University of Maryland Baltimore County (UMBC) showed that summer bridge programs are effective for retaining African Americans students in STEM fields, and those students go on to successfully complete MD/PhD and PhD programs.^{18,19}
2. **Racial/ Ethnic Diversity Programming.** Identify and institute programs that have been shown to create equity for Black/African-American, Hispanic/Spanish/Latino(a) students. These student populations are defined as IUSM's underrepresented minorities in medicine and outlined in the IUSM Diversity Strategic Framework. As cited in the factors facilitating student success, such as mentoring and family support, programs created with equity in mind for the success of minority students are also effective for all students. The nuance here is to use practices relevant to minority students in the development and implementation of success programs. IUSM currently lacks such programs at the undergraduate medical education level. At the graduate medical education level, IUSM has funds to support departments wishing to invite residency applicants for a second look and a School defined diversity category Mentor/Mentee program. Harper⁴⁵ argues, while many institutions emphasize failure and low performance as the reason for underrepresented student (URM) attrition, the emphasis should be placed on better understanding the best practices from successful minority students who have persisted and attained a degree.

3. **Business Intelligence Analyst.** Hire a business intelligence analyst to continue the analysis of student success at IUSM. The Business Intelligence team could continue meeting with various groups and doing literature reviews to then build predictive models that connect student success measures with IUSM Admissions, MSE and Diversity Offices. The new curriculum is going to necessitate new predictive models, dashboards to monitor student's predictions based off of incoming data. More data collection and review needs to be performed.
4. **Curriculum Integration.** Hire a curriculum integration specialist who focuses on improving test taking skills (medical knowledge) and curriculum integration skills.
5. **Continue Research and Evaluation.** Further evaluate etiology for potential disparities in clerkship rotations including student interviews of above and below average performing students. Identify and implement intervention strategies.

Academic Promotion & Graduation

1. **Develop a Series of Test Taking Strategy Sessions.** We recommend providing a comprehensive Q-Bank to all students such as Kaplan or U-World at no cost to the students. The Learning Specialist and the Curriculum Integration Specialist could work together to develop optional sessions in collaboration with faculty. Test taking skills could be improved through focused tutoring sessions.
A study published in a medical education journal from the West Virginia University School of Medicine showed that “**students who used the USMLE World question bank had higher Step1 scores** (M=229, SE=1.4) compared to students who did not use this resource (M=215, SE=4.2)”.³⁹ Further they noted that “commercial preparation courses were not associated with improved scores” at their institution and also “the timing of when the exam was taken was also not associated with significant differences between scores”.³⁹ It was concluded that an interactive study option will offer the best choice to improve Step1 scores. Because IUSM is a much larger institution, we will need standardized statewide access to the sessions.
2. **System for Providing Step1 Resources.** Step1 resources should include the purchase of question banks and vouchers, and consistently implemented statewide. Exposure to NBME practice Step1 exams may prove helpful for identifying strengths and weaknesses prior to the exam.^{6,7} We recommend a robust allocation of Step1 resources for students that include these useful tools.
3. **Mentoring, Advising & Tutoring System.** Currently, IUSM uses the Stoplight Report to engage Lead Advisors, the Learning Specialist, and additional tutors to identify students struggling in their classes and to provide support. This data can be used in real time to identify students who need support. Students who consistently appear on this report are likely to have difficulty with the Step1 Exam; the advising team engages these students to identify areas to increase efforts, which has led to a decrease in Step1 failures. The tutoring training will be developed by medical students and medical education faculty during a special elective. Our tutoring program has been in place for some time now and we are suggesting that we enhance it with funding to make it more robust and available to all of our

students in a uniform manner. It has been shown in “wider educational literature...that tutor training may enhance the outcomes for tutees” considering that “there is insufficient evidence reported within medical education literature to confirm this.”^{42,43,44} Most students do denote that they experience a benefit but would most like receive even greater benefit from a formalized tutoring program with trained peer tutors. One review published in BioMedCentral Medical Education journal discussing systematic approach to peer tutoring that in their literature review some “authors suggest that tutors may have received better assessments if they [the tutors] had formal training.”^{42,44,45} Funding for a statewide organized tutoring system, overseen by a Learning Specialist, related to tutor training and oversight, would be beneficial for student success, and we recommend all lead academic advisors be full-time employees rather than part-time on some campuses. We also recommend that the mentoring and advising program creates opportunities for our medical students to work with physicians on projects and/or shadow them. Lastly, the mentoring and advising program should ensure that students may have the opportunity to meet with advisors or groups of advisors outside of the “office” or “classroom” setting (i.e. a restaurant, coffee shop, etc.)

4. **Practice Exam Vouchers for NBME exams for MS3/Phase 2 Clerkships.** We suggest providing practice exam vouchers as incentive (and decreased financial burden) for students to take a practice NBME shelf exam prior to the final in order to assess areas of strengths and weakness which can be used by our tutoring services to help prepare the student for success.
5. **Policy for Budget Adjustments.** Our current budget adjustment policy for purchasing additional resources to prepare for the Step1/ Step2 CK/CS examinations require a student to fail the exam prior to getting authorization from the IU School of Medicine for a budget adjustment. Budget adjustments for additional resources are justified after the student fails because the USMLE examinations are a graduation requirement and failing the exam can warrant an adjustment for additional resources. This process must be approved by Indiana University and within compliance of the US Department of Education. This policy will have to be in compliance with the Department of Education standards on financial “need” for students.
6. **Track Use of Learning Resources.** A survey should be conducted on students who performed well on the Step1 examination and ask about resources that they used for preparation. It would be helpful to also know frequently used learning tools that trend between successful students across multiple classes (cohorts). With this information, we would be able to make specific recommendations. Also, for students who had a successful remediation experience, it may be helpful to share this data with other students who may need to remediate. Interestingly, an article from the University of Pennsylvania expresses that there is importance in focusing on the “understanding of best practices from successful minority students who have persisted to attain [the medical] degree” in order to help other students. Therefore, we suggest a central office that collects this quality improvement data from students in order to help future students.^{41, 46}

7. **Tuition for Repeated Year.** Adoption of policy that does not charge tuition to medical students who are repeating a year of medical school as their remediation. The expectation of our institution is for successful matriculants to pay only four years of medical school; therefore, we recommend that charges for a repeated year not be administered or a total of only four years of tuition be assessed to students.
8. **Two Year Masters.** Confer a Master of Science in Biomedical Sciences or Master of Science in Medical Sciences for students who successfully complete the first two years of medical school and decide that they do not wish to continue. Potential jobs for students with a Masters of Science in Biomedical Sciences include Biochemist, Compliance coordinator/Manager, Clinical research coordinator, Research assistant, Medical writer, research scientist, among others.

Educational Environment

1. **Curricula Consideration.** Based on the psychosocial context and well-being of students it would be important to consider opportunities for awareness, support, and tools addressing these factors. It has been noted that the *transition courses* may provide the space for offerings that provide development of skills and tools. Proficiency in these aspects is not only essential for medical care, but it is also an important tool in self-care. We also recommend reviewing the probation letter that failing students receive and eliminate any language that might make the student feel ashamed and embarrassed⁴⁶.
2. **Develop Socialization Support.** IUSM should incorporate more opportunities through Medical Student Education, especially for minority students who often find themselves invisible or inferior.⁴⁴
3. **Faculty and Professional Development.** Comprehensive faculty development, which is more important today than ever before, empowers faculty members to excel as educators and to create vibrant academic communities that value teaching and learning.⁴⁷ We need to develop programs that clearly define mistreatment and harassment with thorough examples of how these manifest in the learning environment. Further, we need to educate faculty on how to talk about race and diversity with confidence. Lastly, there needs to be professional development surrounding clerkship evaluations and feedback. At this time, there is no transparency surrounding how clerkship grades are decided. We suggest feedback be required for a grade of 3 or below. There should also be “bias in grading” training to ensure preceptors are providing quality evaluations.
4. **Create a zero-tolerance policy on mistreatment.** IUSM should have a clear declaration of intent across medical education, to provide, maintain, and support learning environments that are rooted in respect for all patients, learners, teachers, and team members. We propose a tiered system for responding to mistreatment concerns (level 1- discussion and feedback, level 2- individualized plan, level 3 supervisor involvement, level 4 disciplinary intervention).

5. **Reporting Structure.** IUSM must assure that the reporting mechanism for mistreatment is safe and accessible to all; students must be protected from retribution or retaliation for reporting mistreatment. Mandatory and centralized tracking of all reported mistreatment incidents should take place. Consistent with the mistreatment response system proposal, 1.0 FTE should be dedicated to a mistreatment project/case manager. Further, protected FTE should be dedicated to the system owner role.

6. **Family Orientation and Ongoing Programs.** Continue to implement the optional, statewide Family and Friends of Medical Students (FFMS) session for all medical students. Family engagement is a well described concept in the literature regarding recruitment and retention of minority and first generation students at the college level.^{1,3,26,27,45,49} Family is defined as spouse or significant other, parent or guardian, a relative, or any person providing mental, emotional, spiritual and/or financial support for the student. A family inclusion program to this degree at the professional school level will likely be the first of its kind and would support our retention efforts.^{32,48,51,52} The FFMS session was held during student orientation and covered health and wellness, financial aid, and curriculum. Additionally, there was a panel at the end that allowed for sharing of current student experiences. Future FFMS will include breakout sessions based on the relationship to the student.

Beyond orientation, additional services should include a contact person for parents to ask questions regarding the student's progress and their schedule, consistent with FERPA. Ideally, family should be engaged once each semester to share the requirements of the student during that semester. A financial aid webinar at the end of each year (in the spring) with families to discuss debt management and optional support for students can help increase family support.

7. **Medical Student Education.** IUSM should provide programmatic funding and personnel resources to allow activities that support students and assess the learning environment (i.e. Data Analyst). Centralizing ongoing holistic assessment of the learning environment and student success with one staff member allows members of IUSM to access data in a simpler manner, with this staff member understanding the different sources of data available and streamlining data for ease of consumption.

Future Research

Admissions and Pre-matriculation

1. Adjustments to Predictive Models to include MS2 Rank (GPA)
2. Modify interview notes that include interview scores for eye contact and any volunteering vs. shadowing experience to improve predictive models. Standardize evaluation of eye contact during the interview process.

Academic Promotion and Graduation

1. Due to the short timeline, the SSAC was unable to determine rigorous internal data that could reveal opportunities to support student success. More IUSM specific research is needed to examine the influence of different academic, social, and environmental factors on students successfully matching with a residency. One of these areas is to conduct a qualitative review of 3rd Year Clerkship evaluations for students who do not match

successfully to determine any indicators or patterns. Another is to examine the impact of evaluator bias on 3rd Year Clerkship evaluations.

2. Continual monitoring and assessment of professional development programs to gauge impact on student match rates.

Learning Environment

1. Conduct a study that looks at Exit Interview qualitative data. The goal would be to better understand the experiences of those students who have left the institution but also to standardize a process in which we can actively learn from for programmatic and learning environment/climate understanding.
2. Conduct minority medical student specific climate/learning environment assessment in partnerships with the Office of Diversity Affairs to better understand the experiences of minority students at IUSM.

Conclusion

The SSAC came together to develop recommendations for student success in the medical school after being charged by the IUSM Faculty Steering Committee. The recommendation developed stemmed from research about the experiences of medical students overall, and research pertaining to IUSM medical students specifically. Three categories emerged when the SSAC reviewed IUSM data, and those categories were admissions and pre-matriculation, academic promotion and graduation, and educational environment. Of the recommendations created, the overarching consensus was that a EAD of Diversity position should be created to ensure recommendations are made a priority within the school, all programs recommended should be instituted statewide, and more time should be devoted to issues related to student success. Finally, recommendations for future research have also been put forward to give the Steering Committee and Dean Hess ideas about what else could be done to impact and hopefully support the success of IUSM students.

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Appendix 1: IUSM Academic Difficulty Data

Figure 1: IUSM Promotion Failure Data

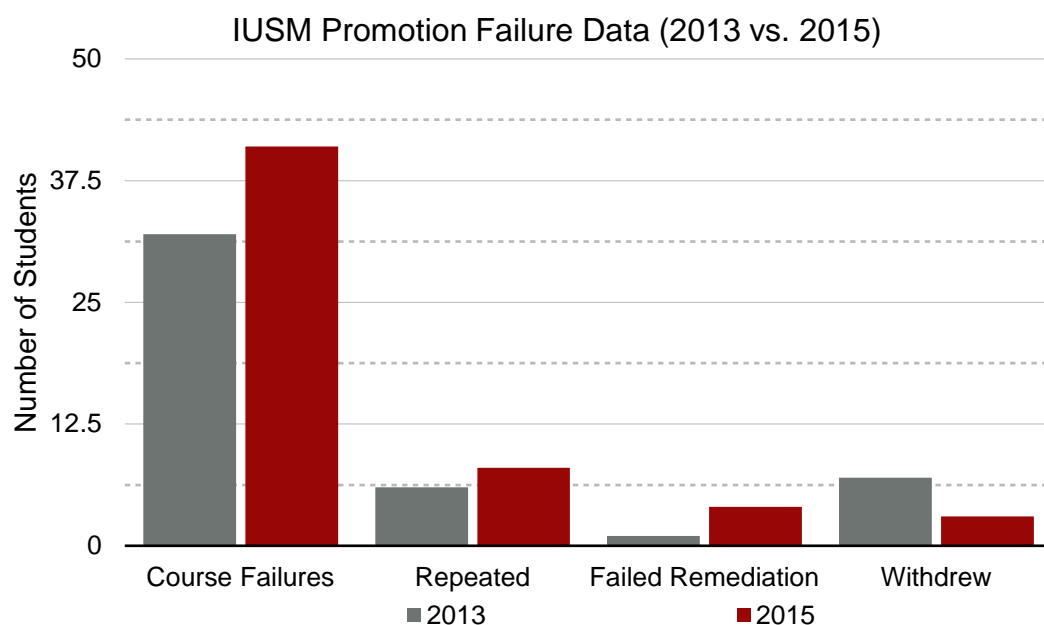


Figure 2: Course Failures by Cohort

	2011	2012	2013	2014	2015
Instances of Course Failure	55	35	32	60	41
# of Students w/ Course Failure	38	27	19	30	26
# of Single Course Failure	30	20	9	15	15
# of Multiple Course Failure	8	7	10	15	11
Percent of Multiple Course Failure	21%	26%	53%	50%	42%

Figure 3: Course Failure Percentage by Course and Cohort

Course	2011	2012	2013	2014	2015	Average
Gross Anatomy	27%	23%	28%	37%	37%	30%
Biochemistry	5%	17%	19%	13%	10%	13%
Cell Molecular	2%	6%	3%	5%	5%	4%
Histology	2%	11%	6%	18%	10%	10%
ICM					2%	2%
Immunology	7%	3%	6%	7%	5%	6%
Medical Genetics	4%	3%				3%
Microbiology	36%	11%	6%	8%	5%	13%
Neuroscience	5%	3%	16%	7%	7%	8%
Physiology	11%	23%	13%	3%	20%	14%

Figure 4: Student Enrollment by Race and Cohort

	2011		2012		2013		2014		2015		2016	
	#	%	#	%	#	%	#	%	#	%	#	%
Hispanic/Latino	15	5%	14	4%	18	5%	33	9%	33	9%	50	14%
African American	20	6%	23	7%	23	7%	31	9%	33	9%	29	8%
American Indian		0%		0%		0%	*		*		0	0%
Asian American	34	10%	48	14%	43	13%	51	14%	55	15%	54	15%
Native Hawaiian or Pacific Islander		0%		0%	*			0%		0%		0%
Two or more races	*		11		*		12		*			
White	234	72%	219	65%	248	72%	223	63%	220	62%	212	60%
International	*				*		*				*	
Unknown	15	5%	20	6%	*		*		*			0%
Total	327		335		344		354		355		352	

Source: IUPUI Enrollment Data: <https://uirr.iu.edu/facts-figures/enrollment/index.html>; * denotes counts less than 10

Figure 5: Students with Academic Failure by Race and Cohort

	2011		2012		2013		2014	
	#	% of total	#	% of total	#	% of total	#	% of total
African American	13	18%	12	34%	10	30%	6	13%
Asian	10	14%	3	9%	4	12%	8	17%
Hispanic	0	0%	1	3%	3	9%	7	15%
Other	3	4%	2	6%		0%	3	7%
Unknown	2	3%	2	6%	1	3%	3	7%
White	43	61%	15	43%	15	45%	19	41%
Total	71		35		33		46	

Figure 6: ID-MK by Race and Cohort

	2011			2012		
	#	% of Total	# Prior Acad Diff (%)	#	% of Total	# Prior Acad Diff (5)
African American	8	20%	6 (75%)	14	35%	9 (64%)
Asian	6	15%	3 (50%)	13	33%	2 (15%)
Hispanic	0	0%	0 (0%)	0	0%	0 (0%)
Other	2	5%	0 (0%)	1	3%	0 (0%)
Unknown	1	3%	0 (0%)	3	8%	0 (0%)
White	23	58%	6 (26%)	9	23%	3 (33%)
Total	40			40		

Figure 7: Step1 Failures by Race and Cohort

	2011		2012		2013	
	#	% of Total	#	% of Total	#	% of Total
African American	3	50%	2	29%	6	46%
Asian	0	0%	0	0%	1	8%
Hispanic	0	0%	0	0%	0	0%
Other	0	0%	0	0%	0	0%
Unknown	1	17%	1	14%	1	8%
White	2	33%	4	57%	5	38%
Total	6		7		13	

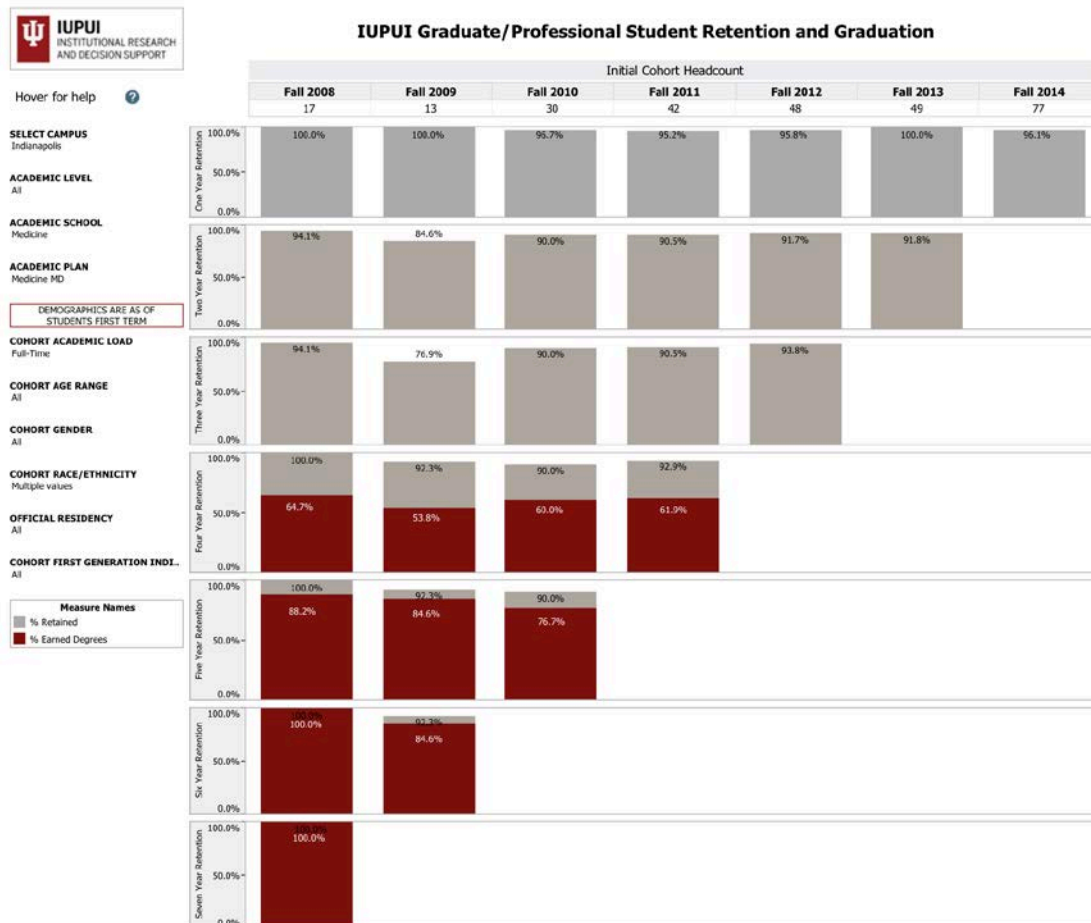
Appendix 2: Retention & Graduation Rates of Students Entering 2011AY

Figure 1: Retention & Graduation Rates of All, URM, First Generation, and 30+ Students

Fall 2011	1 st Year Retention	2 nd Year Retention	3 rd Year Retention	4 th Year Graduation
All Students (N=327)	97.9%	92.4%	92.4%	81.3%
White Students (N=234)	98.7%	93.6%	93.6%	85.9%
Black Students (N=20)	95%	85%	90%	60%
Latino Students (N=15)	93.3%	93.3%	86.7%	60%
1st Gen Students (N=23)	100%	95.7%	100%	78.3%
Students over 30 (N=6)	100%	100%	100%	50%

Source: IUPUI Graduate/Professional Student Retention and Graduation Data

Figure 2: IUSM URM Retention & Graduation Rates



Appendix 3: Student Indebtedness

“Fees for a student not taking all of the standard medical school courses during the academic year will be assessed at the current School of Medicine professional credit-hour rate, not to exceed the full-time annual rate for the number of hours to be taken. It is rare that a student is exempted from courses and will be unlikely with the change to the new curriculum in fall 2016. **Students who are required to repeat any academic work previously attempted will be assessed for another year at the current rate.**”

- *IUSM Student Handbook 2016*

“The highest indebted students (top twelve indebted students before we have a white student) at IUSM are Hispanic and African American students.

As a group, it is the African American student. Largely, our minority students are non-residents and pay more as an out-of-state student and came in with debt. The overall debt (including undergraduate, graduate and medical school debt as well as accrued interest) ranges from \$401,953 to \$505,060 for these twelve. All of them had substantial borrowing as an undergrad (ranging from \$50,936 to \$134,204). This is all data from the NSLDS. Overall, our 39 minority students graduating this year had an average of \$211,357 compared to the \$194,000 among our majority students.

Interestingly enough, our African American/Black males borrowed less than our African American/Black females. African American/Black females tend to live alone while the African American/Black male tend to live with roommates. Females are generally are supporting extended family while males are not.

Students from disadvantaged backgrounds tend be less indebted than those not from disadvantaged backgrounds. This is in keeping with the many more grant and scholarship opportunities disadvantaged students have over non-disadvantage.”

- *Jose Espada, Financial Aid Director*

Appendix 4: Master in Science Career Options

Potential Career options with the Masters of Science in Biomedical Sciences²⁸

“As reported by the U.S. Bureau of Labor Statistics, career opportunities for biomedical scientists are expected to increase 20 percent through 2016, faster than average for all occupations. They include:

- Colleges and universities (34 percent)
- Scientific research and development agencies (28 percent)
- Pharmaceutical and medicine manufacturing (12 percent)
- Hospitals (9 percent)
- Private educational services, ambulatory health care services, epidemiology (17 percent)”

Potential Jobs with Masters of Science in Biomedical Sciences²⁹

“Biochemist (settings include colleges/universities, drug companies, government agencies)

- Compliance Coordinator/Manager (settings include hospitals, pharma/biotech companies)
- Clinical Research Coordinator (settings include biotech, pharma, medical device, hospitals)
- Research Assistant (setting include research centers, universities, hospitals)
- Medical Writer (settings include biotech, pharma, research centers)
 - Research scientist (settings include universities, biotech, pharma)”

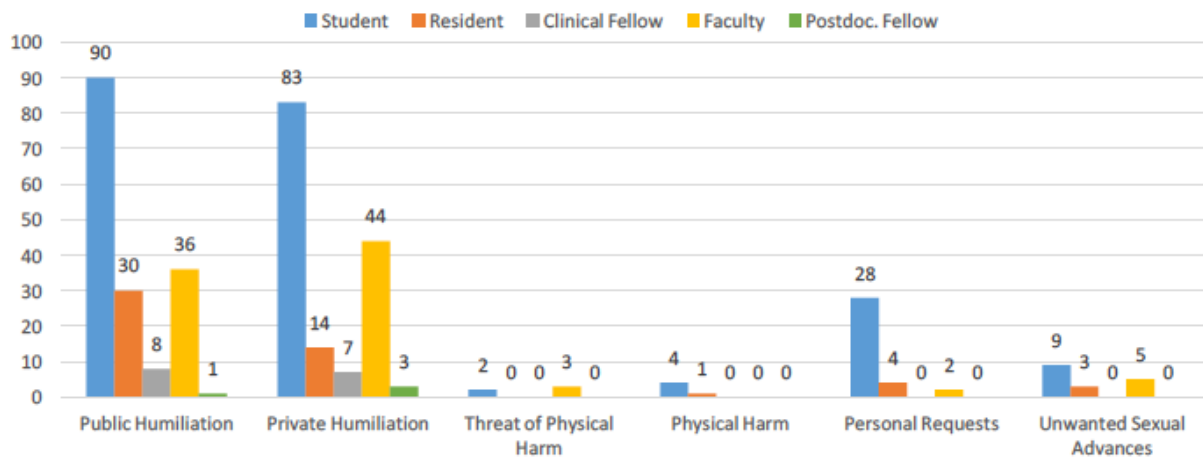
Appendix 5: 2016 Graduate Questionnaire – Experiences of Mistreatment

Mistreatment Behavior	Never		Once		Occasionally		Frequently	
	IUSM	ALL	IUSM	ALL	IUSM	ALL	IUSM	ALL
a. Been publicly harassed	46.6	58.1	26.3	20.5	27.1	20.4	0.0	1.0
b. Been publicly humiliated	71.4	78.8	16.5	12.6	12.0	8.2	0.0	0.5
c. Been threatened with physical harm	99.2	98.6	0.8	1.0	0.0	0.3	0.0	0.1
d. Been physically harmed	98.5	98.1	1.5	1.6	0.0	0.3	0.0	0.1
e. Been required to perform personal services	92.5	94.3	3.8	3.8	3.8	1.7	0.0	0.1
f. Been subjected to unwanted sexual advances	93.2	96.2	2.3	2.4	4.5	1.3	0.0	0.2
g. Been asked to exchange sexual favors for grades or other rewards	99.2	99.8	0.8	0.1	0.0	0.1	0.0	0.1
h. Been denied opportunities for training or rewards based on gender	92.4	94.4	3.8	2.6	3.8	2.6	0.0	0.4
i. Been subjected to offensive sexist remarks/names	78.9	87.1	8.3	6.3	12.0	6.1	0.8	0.5
j. Received lower evaluations or grades solely because of gender rather than performance	88.0	94.3	9.0	3.7	2.3	1.7	0.8	0.3
k. Been denied opportunities for training or rewards based on race or ethnicity	95.5	97.1	0.8	0.9	3.0	1.5	0.8	0.5
l. Been subjected to racially or ethnically offensive remarks/names	90.8	93.3	5.3	3.5	3.8	2.7	0.0	0.4
m. Received lower evaluations or grades solely because of race or ethnicity rather than performance	96.2	97.3	0.8	1.3	2.3	1.0	0.8	0.4
n. Been denied opportunities for training or rewards based on sexual orientation	100.00	99.5	0.0	0.2	0.0	0.2	0.0	0.1
o. Been subjected to offensive remarks/names related to sexual orientation	98.5	98.0	0.8	0.9	0.8	1.0	0.0	0.2
p. Received lower evaluations or grades solely because of sexual orientation rather than performance	100.00	99.5	0.0	0.3	0.0	0.1	0.0	0.1
q. Been subjected to negative or offensive behavior(s) based on your personal beliefs or personal characteristics other than your gender, race/ethnicity, or sexual orientation	90.9	92.4	3.0	3.7	4.5	3.3	1.5	0.6

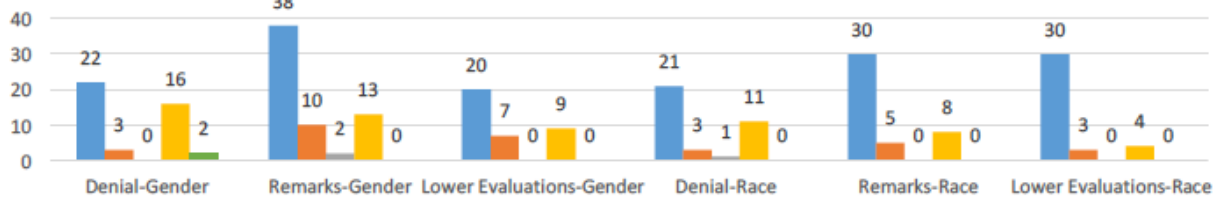
Source: 2016 AAMC Medical School Graduation Questionnaire for IUSM

Appendix 6: Total Transgressions by Type and Role of Respondent

Total Transgressions by Type and Role of Respondent

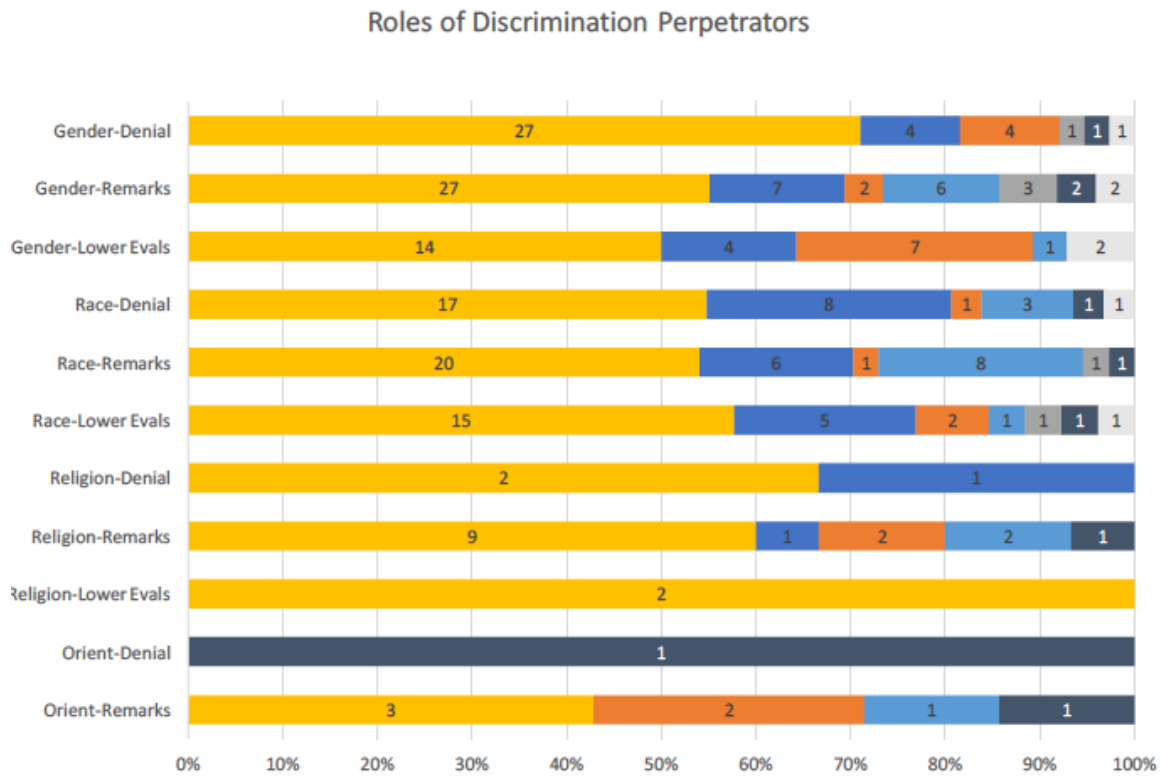
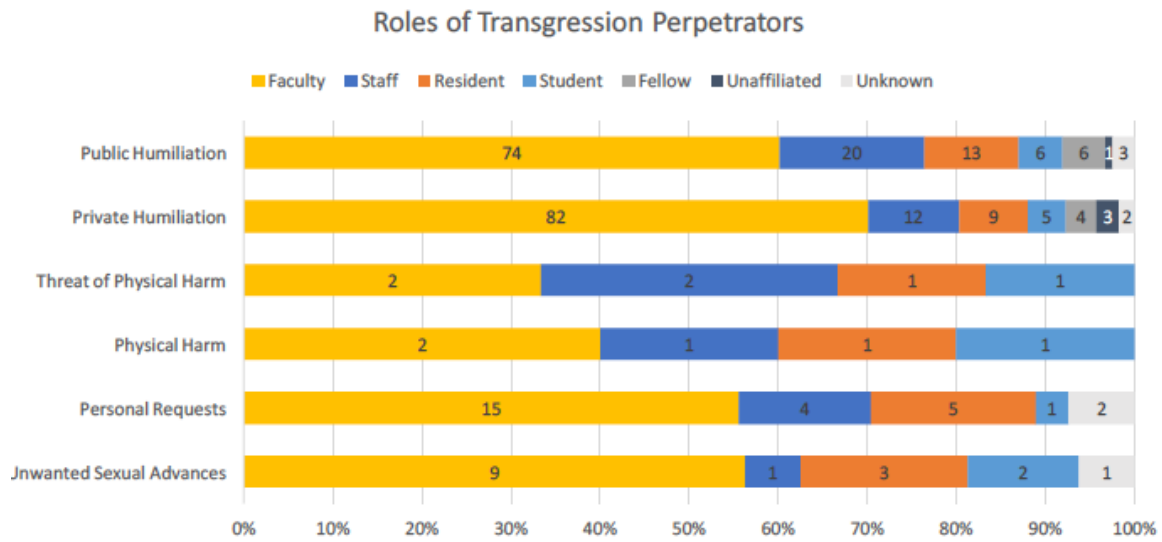


Incidents of Gender or Racial Discrimination by Respondent Role



Source: IUSM Tolerance Survey (n.d.)

Appendix 7: Roles of Transgression Perpetrators



Source: IUSM Tolerance Survey (n.d.)

Appendix 8: TLAC Response Steps

- Contact a member of the TLAC directly or at TLAC@iupui.edu and discuss the concern
- Provide a written description of the complaint and request for TLAC to explore the issue
- TLAC Chairperson assigns a rapid response team consisting of faculty, residents and student to the complaint.
- Once assembled, the response team will make every effort to establish contact and begin the process as soon as possible.
- The response team confidentially meets with the individual who raised the concern first and then with other parties related to the issue as necessary.
- The response team then meets and organizes their ideas to address the specific issue raised, systemic school-wide implications and possible methods of resolution or improvement.
- The response team reports back to the entire TLAC in a confidential manner, names and departments involved can usually be kept anonymous.
- A summary and response is submitted to the Chairperson and EAD of OFAPD.
- The EAD of OFAPD decides on an action to take with recommendations from the TLAC as well as other IUSM leaders.
- The EAD of OFAPD or his/her designee will discuss a resolution with all involved parties.

REPORT FROM THE AD-HOC COMMITTEE ON STUDENT SUCCESS

December 2016



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Membership

- Dr. Alvaro Tori (Asst. Dean Diversity Affairs), Chair
- Alison Banta (Staff Member, Department of Emergency Medicine)
- Dr. Bart Besinger (Student Promotions Committee and Faculty Assembly)
- Vicki Bonds (Director of Health Professions and MSMS program)
- Dr. Taihung (Peter) Duong (Assoc. Dean Admissions, Terre Haute Center Director)
- Dr. Antwione Haywood (Asst. Dean Medical Student Education)
- Gerard Hills (Student Representative)
- Dr. Abby Klemsz (Asst. Dean Academic Advising)
- Dr. Regina Kreisle (MK Competency Director, West Lafayette Center Director)
- Meagan Senesac (Senior Business Intelligence Analyst, Dean's Office)
- Sylk Sotto (Vice Chair of Faculty Affairs, Department of Medicine)
- Dr. Chemen Tate (Admissions Committee, Diversity Council)

- Administrative Support provided by Mrs. Carlie Turner
- Graduate Assistant support provided by Jacqueline Mac and Mrs. Sacha Sharp



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Definition of Success

The SSAC defined student success as:

“A measure of medical school education that reflects the strength of the student’s credential for graduation, for successfully matching into residency, or for securing an intended career after graduation.”

- **Three identified areas of impact:**
 - Admissions and pre-matriculation,
 - Academic promotion and graduation
 - Educational environment



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Factors that Impacted Success

The most important early predictor of success was student performance in the first year



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Pre-Matriculation Factors

(Poor performance in 1st year and USMLE Step 1)

- Age 25 years or older at matriculation
- Identification as Hispanic
- Low MCAT physical science score
- These 3 risk factors did not play a role in success as matriculation continued.



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Recommendations from Research and Pre- Matriculation Data

- Adopt a Head Start Summer Prep Session
- Institute Racial/Ethnic Diversity Programs
- Hire a Business Intelligence Analyst
- Curriculum integration (specialist who focuses in improving test taking skills and curriculum integration skills)
- Continue Research and Evaluation



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Academic Promotion

- Medical student's ability to progress through the program with passing scores.
- Matching and graduation
- Students who performed poorly on Step1 scores and 3rd year clerkship grades, were less likely to graduate and match.
- Association between 1st year GPA and USMLE Step 1 performance



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- Identification as Black/African-American negatively affected chances of achieving above average 3rd year clerkship GPA, class rank in 4th year and match success and graduation.
- Identification as Asian negatively affected chances of achieving above average clerkship GPA.
- 1st year GPA again had a more positive correlation with above average 3rd year GPA.



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Recommendations for Academic Promotion

- Develop Test Taking Strategy Sessions
- Have a System for Providing Step1 Resources
- Enhance Advising and Tutoring System (Learning specialist; full time learning advisors)
- Develop Practice Exam Vouchers
- Create a Policy for Budget Adjustment
- Track Use of Learning Resources
- Provide Tuition for Leap Year
- Have Two Year Masters Degrees



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Educational Environment

- Research suggests that medical students experience burnout and distress that negatively impacts their success.
- Medical students, especially underrepresented minority students, experienced mistreatment in the form of physical intimidation, public belittlement, and racial and gender discrimination.
- In addition to the research, IUSM data confirms that students in the medical school are experiencing mistreatment from faculty, residents, and peers.



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Recommendations to Address Educational Environment

- Socialization Support Development
- Faculty and Professional Development (excel as educators, confidence in discussing diversity issues and clerkship “bias in grading” training)
- Zero Tolerance Policy
- Mistreatment Reporting Structure Enhancements
- Curricula Considerations (awareness, support and tools)
- Family Orientation and Programs
- MSE Funding



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Overarching Recommendations

- EAD of Diversity Affairs
- Make programs State-wide
- Reassess program implementations



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Additional Support Needed for IUSM Students

- Black/African-American students
- Hispanic/Spanish/Latino(a) students
- Students age 25 or older at admission
- Students with below average performance in the first year
- Students admitted with an MCAT PS of 7 (or equivalent)



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