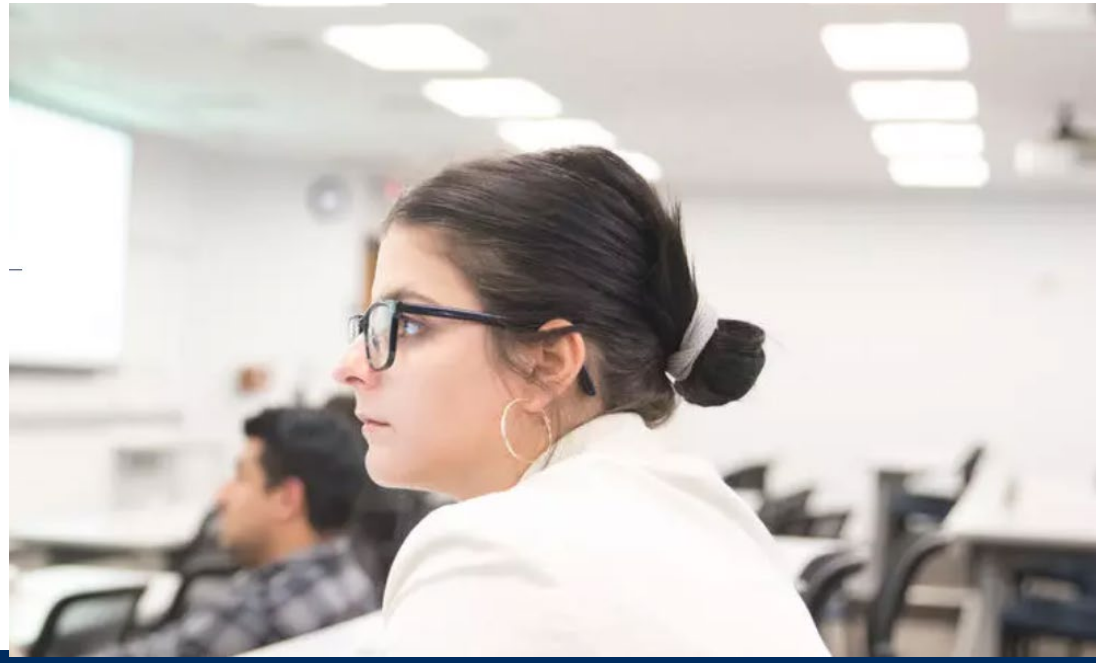
Medical Education Readiness Program

Medical Education Readiness Program: Our Guided Approach to Foster Success in Medical School

by Dr. Inna Lindner



- **Student ramp to medical school**

MEDICAL SCHOOLS

ROSS UNIVERSITY SCHOOL OF MEDICINE

AMERICAN UNIVERSITY OF THE CARIBBEAN · 1978 ·

STUDENT BODY

- Post-baccalaureate students
- Students who need to enhance their science foundation
- Students with low GPAs or MCAT
- Career changers
- Underrepresented minority students
- First-generation college students
- Students from disadvantaged backgrounds
- Students with non-traditional backgrounds
- Students who were not accepted into medical school

MERP HISTORY

- 15-week postgraduate pre-matriculation program
- First class seated in August 2004 (for RUSM students), first class for AUC seated in April 2012
- Since 2020 COVID epidemic, MERP is offered 3 times a year in virtual environment
- Class size varies; typical class consists of approximately 90 - 160 students
- Students successfully completing MERP matriculate to the medical school that has granted them conditional acceptance: RUSM or AUC
- More than 4,000 MERP students have graduated from MERP and entered RUSM or AUC medical schools

MERP COHORT AT RUSM (started med school Jan 2024)

MERP OBJECTIVES

DEEPEN STUDENT KNOWLEDGE

Build upon your existing knowledge, by focusing on the strong foundational principles and skills needed to thrive in medical school.

PERFECT LEARNING STYLE

Receive individualized, expert coaching on effective study strategies and knowledge retention techniques.

INCREASE CONFIDENCE

Enter medical school prepared for the significant workload you'll encounter there.

BUILD STUDENT NETWORK OF SUPPORT

Establish a built-in support system of friends and study partners and start medical school together.

"I learned how I study best, and key things that I can do to make sure that I do well on exams and know the material really well."

Mahir Maruf
April 2012 MERP Completion, 2016 RUSM graduate

Explore MERP


ARCTIC OCEAN
Greenland
(Denmark)
Svalbard
(Norway)
ARCTIC OCEAN
United States
Canada
Iceland
Russia
Norway
Sweden
Finland
Estonia
Latvia
Lithuania
U.K.
Ireland
Den.
Neth.
Belg.
Germany
Poland
Belar.
Ukraine
Mol.
Rom.
Bul.
Armenia
Geor.
Az.
Kazakhstan
Mongolia
Uzbek.
Turkm.
Kyrgyzstan
Tajikistan
Afghan.
Pakistan
Nepal
Bhutan
China
Japan
Korea
Taiwan
Laos
Vietnam
Cambodia
Philippines
Bur.
Thai.
Bangl.
Sri Lanka
Malaysia
Indonesia
Timor-Leste
Papua New Guinea
Solomon Islands
New Caledonia
Fiji
New Zealand
Australia
PACIFIC OCEAN
PACIFIC OCEAN
ATLANTIC OCEAN
ATLANTIC OCEAN
INDIAN OCEAN
Portugal
Spain
France
Italy
Cyprus
Greece
Turkey
Iran
Iraq
Syria
Lebanon
Israel
Jordan
Kuwait
Qatar
Saudi Arabia
U.A.E.
Oman
Yemen
Djibouti
Eritrea
Ethiopia
Somalia
Sudan
South Sudan
Morocco
Tunisia
Algeria
Libya
Egypt
Western Sahara
Mauritania
Mali
Niger
Chad
Senegal
The Gambia
Guinea-Bissau
Guinea
Sierra Leone
Liberia
Cote d'Ivoire
Ghana
Togo
Benin
Nigeria
Cameroon
C.A.R.
Equatorial Guinea
Gabon
Congo
Dem. Rep. of Congo
Kenya
Uganda
Rwanda
Burundi
Tanzania
Angola
Zambia
Namibia
South Africa
Lesotho
eSwatini
Mozambique
Malawi
Madagascar
Mexico
Caribbean
Central America
Guyana
Suriname
French Guiana (France)
Venezuela
Colombia
Ecuador
Peru
Brazil
Bolivia
Paraguay
Chile
Argentina
Uruguay
SOUTHERN OCEAN
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SAMPLE OF WEEKLY SCHEDULE

MERP WEEKLY

Weekly quizzes or exams

Lectures

Weekly academic success sessions

- **Small group** discussions
- **Large group** lectures

Faculty Open Labs

Anatomy workshop

Teaching fellow reviews

One-on-one appointments

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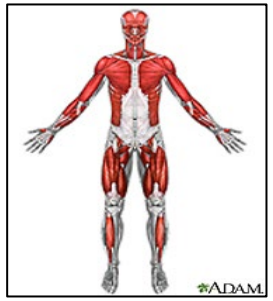
COURSE COMPONENTS

All MERP faculty hold a PhD in their respective fields

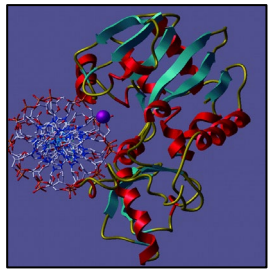
LECTURE-BASED FUNDAMENTAL SCIENCE COURSES

- 48 hours of each subject per semester
- All lectures are recorded and can be viewed throughout the semester

Medical Anatomy/Histology

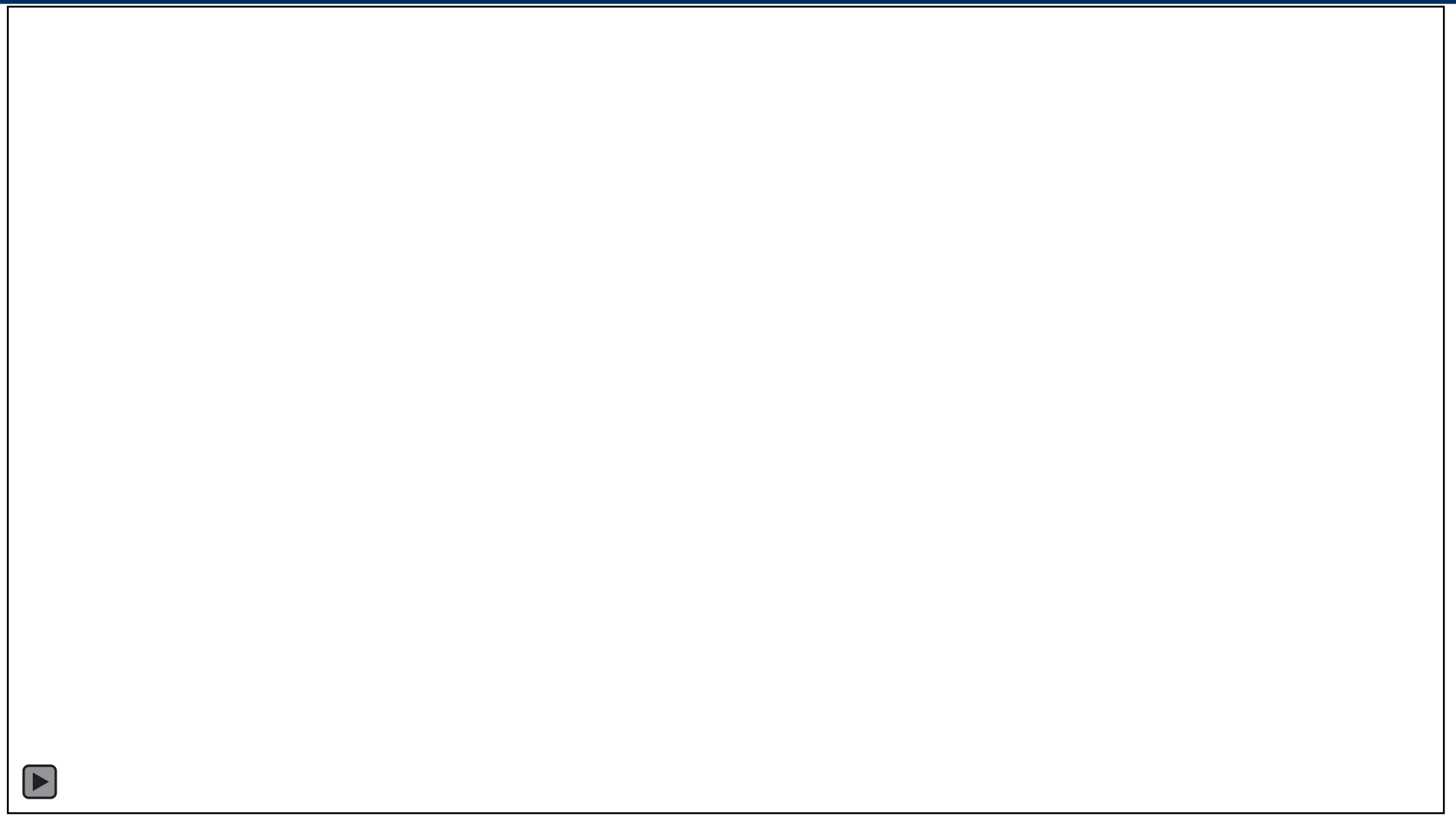


Medical Physiology/Biophysics



Medical Microbiology/Immunology

Medical Biochemistry/Genetics

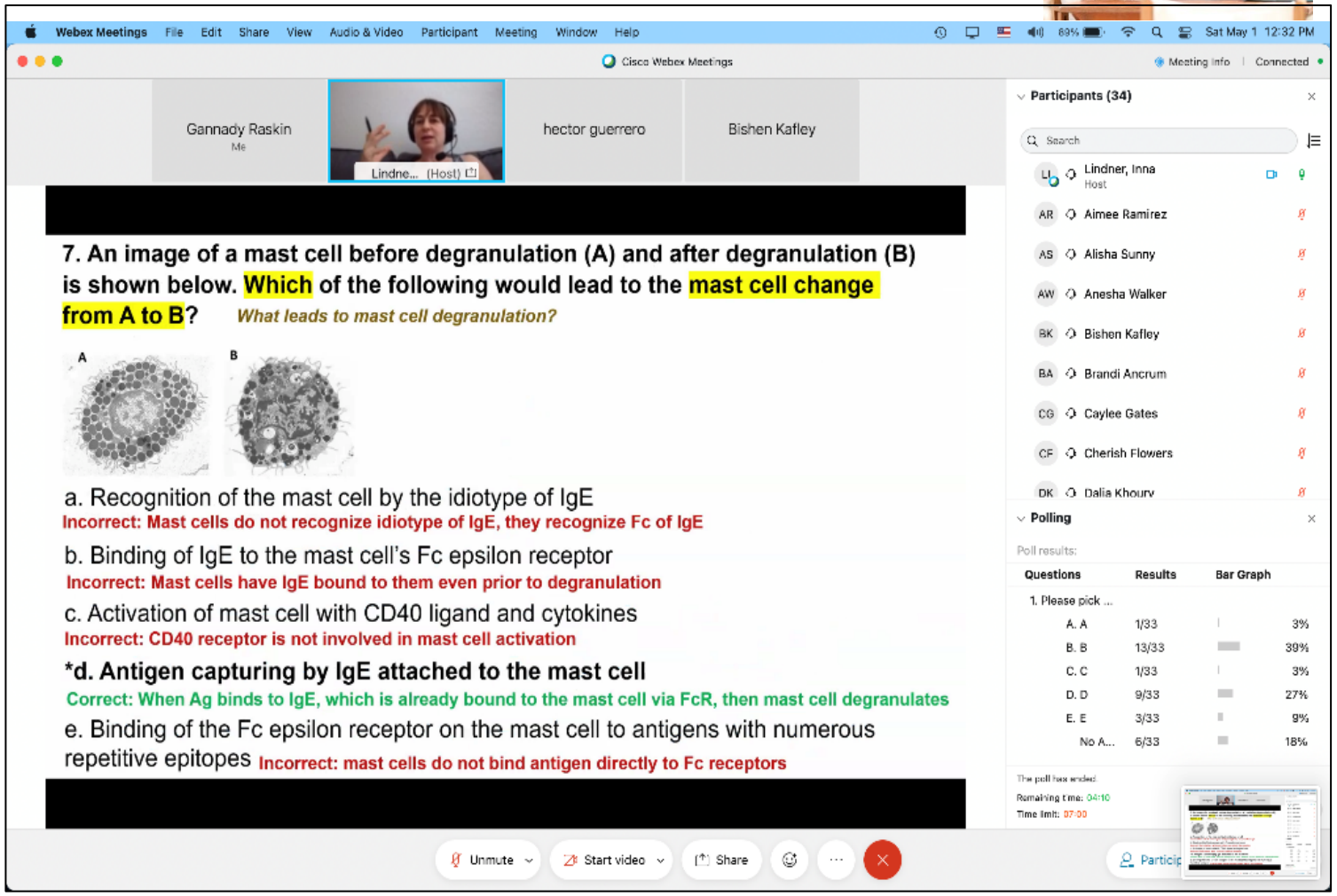


Lecture delivery

Lecture were held in person from 2005 to 2020

Lectures and all supplemental activities are delivered ONLINE synchronously since COVID epidemic

- Attendance is mandatory and monitored
- All lectures are recorded
- Students are engaged during the lecture by responding to a series of polling questions
- Polling question results are discussed by faculty
- The faculty or the TAs answer questions in class via chat function
- Any unanswered question can be asked via email



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Teaching fellows support main faculty

MERP teaching fellows hold an MD and have recently graduated from RUSM or AUC

Responsibilities:

- ✓ Conduct lecture reviews, provide practice questions
- ✓ Hold office hours and meet with students individually
- ✓ Enhance non-cognitive skills
- ✓ Provide guidance with Anatomy Lab
- ✓ Assist in developing clinical correlations

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Academic success component – *unique to MERP*

In addition to main curriculum, MERP offers regularly scheduled sessions designed to improve student academic achievements by perfecting study skills.

Sessions include:

- *Time management*
- *Test-taking strategies on USMLE- type questions*
- *Unit conversion skills*
- *Note-taking strategies*
- *Concept mapping*
- *Graph and data interpretation*

Small group activities

- Students are divided into groups of ten or less
- Students meet with their group and a faculty member once a week
- Discussion of effective learning strategies, practice questions and medical terminology is integrated into sessions

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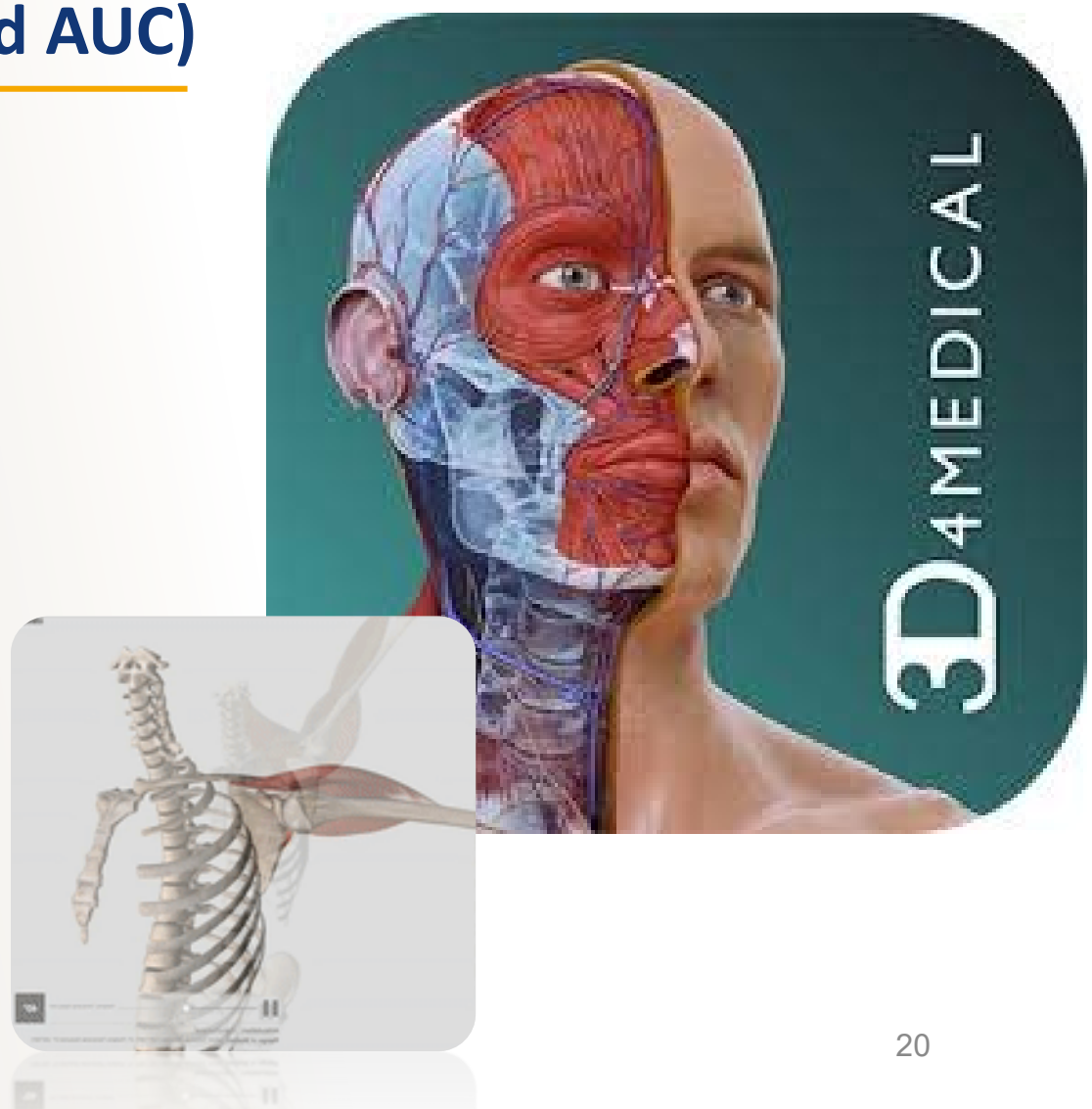
Anatomy Workshops

- Students are highly encouraged to attend on-line weekly lab/workshop sessions
- Faculty will lead students through clinical correlations
- Discussions will focus on interpretations of a variety of medical imaging modalities, cross-sectional anatomy, and histological micrographs
- Participation in these sessions helps students make connections between typical anatomy and clinical applications

Complete Anatomy app (used by RUSM and AUC)

- Each lecture has 10-20 complete anatomy slides assigned to it
- Students should view the assigned slides weekly



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Faculty support of students

- 1:1 appointments - 2-3 hours/week *(not on Weekly)*
- Weekend Open Labs *(not on Weekly)*
- Weekly Open Office Hours

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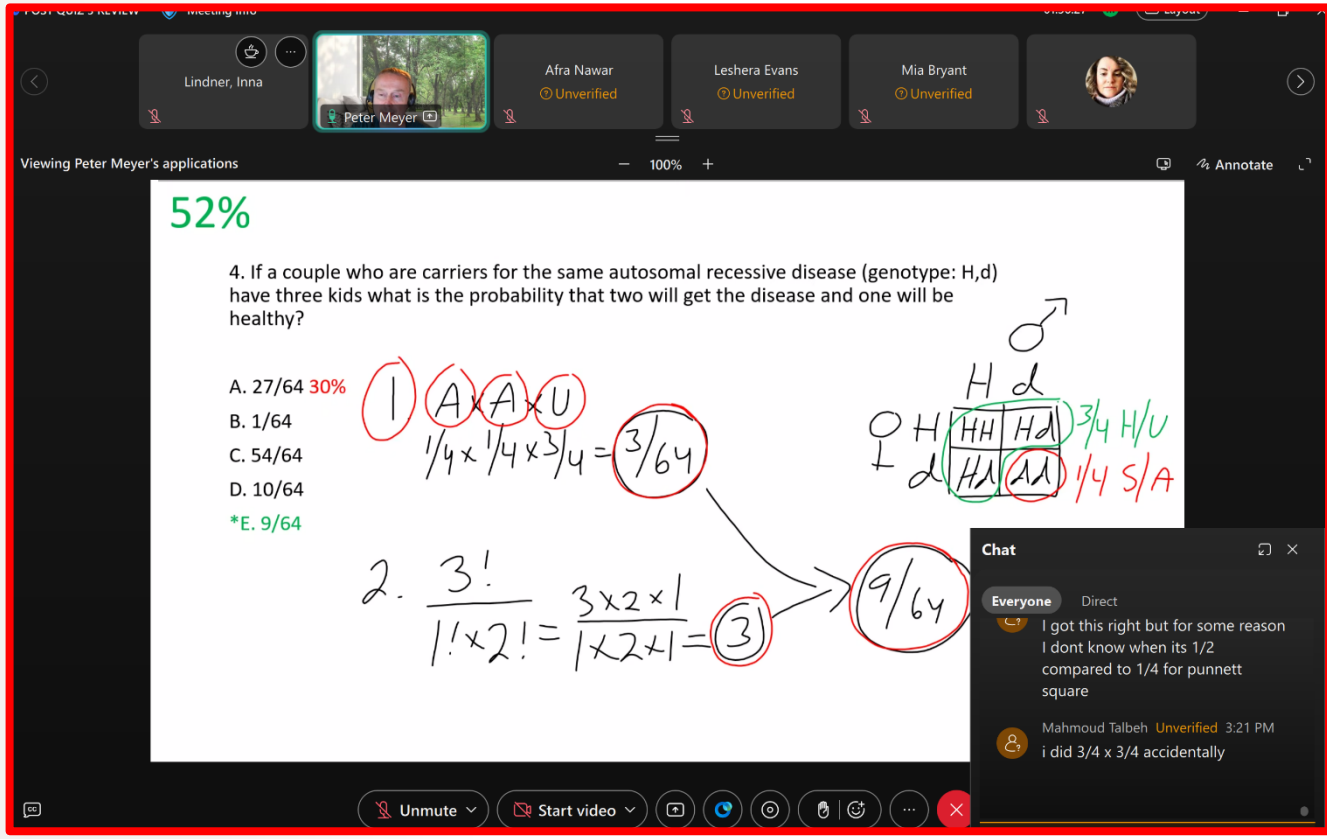
MERP QUIZZES AND EXAMS

Assessments (13 out of 15 weeks)

- Weekly quizzes (10 total)
- Exams (3 total)
- Combine all subjects
- All quizzes and first two exams have post-assessment review
- Every question discussed
- Students can challenge any question



Student Services

MERP CARE

- MERP Care initiative identifies academically at-risk students for early intervention
- Non-academic personal barriers and academic barriers are identified
- Proactive outreach is provided following quizzes and examinations with individualized feedback for improvement.
- Students are categorized from red (low-performing) to yellow (mid-performing at-risk) to green (high performing low-risk).

70%+

50% to 69%

below 49%

- Each learner's progress is assessed, personalized recommendations for red-and yellow-categorized learners are provided.
- Appropriate referrals are made to the MERP counselor

MERP initiatives

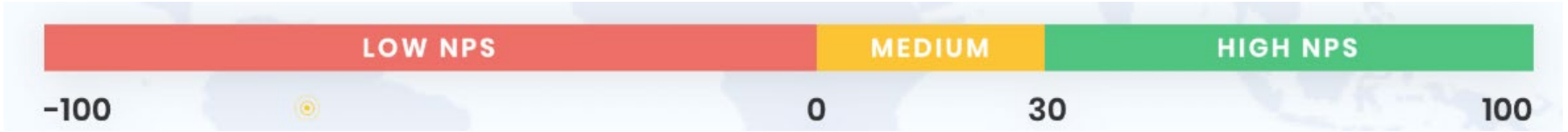
- **Modified prerequisites –** certain traditional prerequisites waived and replaced with more holistic evaluation
- **Opportunity to repeat -** Students failing MERP are given a second chance to repeat the program, have a much better success rate
- **Allowing struggling MED students to patriciate in MERP –** several iterations of “MED to MERP” cohorts have shown academic improvement in medical school upon return
- **EDAPT curriculum development –** Designing an engaging, comprehensive MERP curriculum to be delivered as a supplement to the current MERP curriculum or to be administered as a stand-alone course to international students

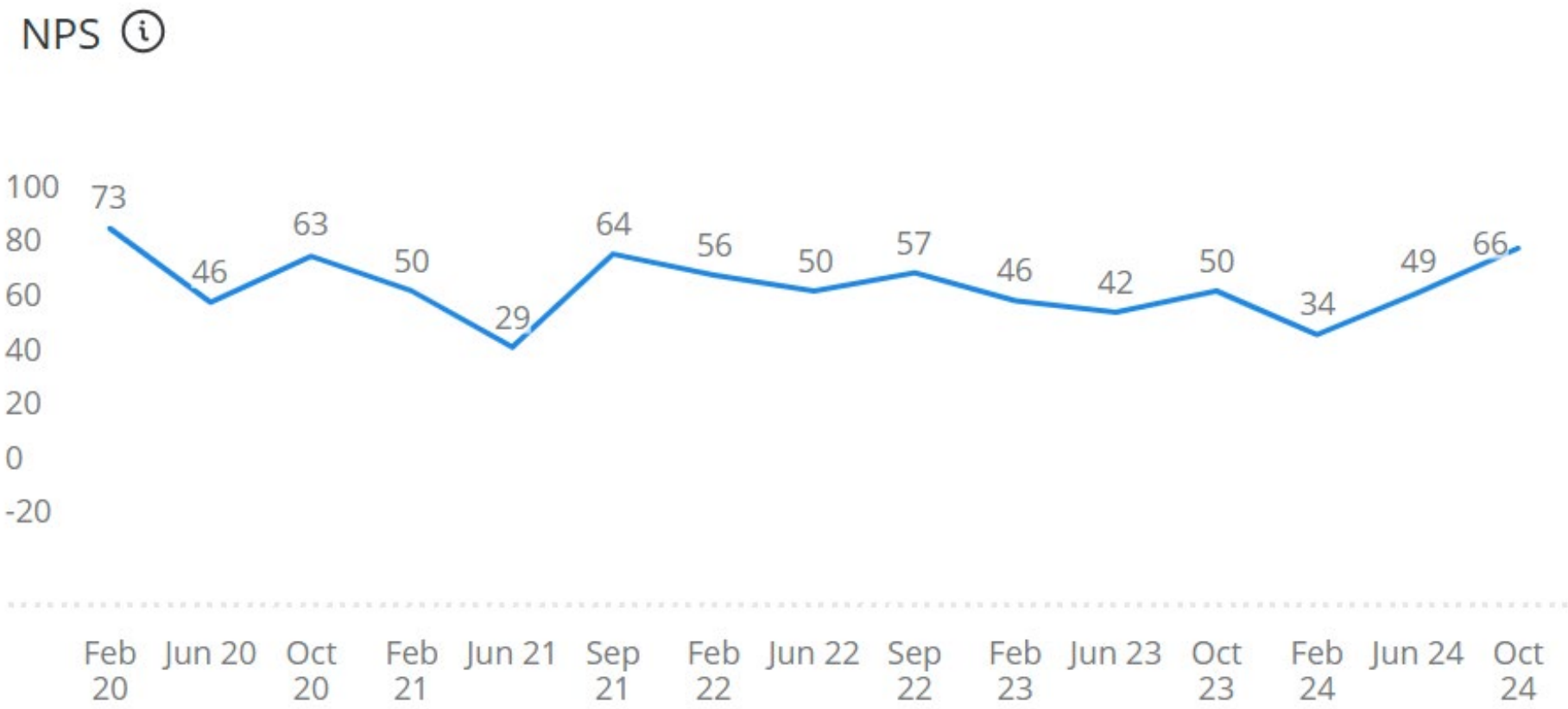
edapt

Challenges in online environment

- **Difficulty in engaging students (some engaged, some distracted)**
- **Easy to quit the program**
- **Challenges for online MERP students to find adequate quite study space – multi-generational family households, other distractions**
- **Absence of anatomy tactile experience (workshops, dry models, mannequins), difficult to learn fundamental anatomy virtually**
- **Difficulty in establishing personal connections between students and between faculty and students**
- **Challenges in establishing learning communities**
- **Difficulty in building a meaningful networks of support**

MERP NET PROMOTER SCORE (NPS)





Published peer-review work regarding MERP student success at RUSM

Medical Teacher 2013

2013, 1, Early Online MEDICAL TEACHER

LETTER TO THE EDITOR

A pre-matriculation learning program that enables medical students with low prerequisite scores to succeed

Dear Sir

Selection of qualified medical school candidates from a large applicant pool is a challenging process that precludes potentially successful individuals from a career in medicine. Current quantitative measures and non-cognitive indicators do not accurately predict performance. Our group hypothesized that a post-baccalaureate Medical Education Review Program (MERP) would prepare its graduates for Ross University School of Medicine (RUSM) and that success in MERP would correlate with performance at RUSM. MERP, a 15-week basic science curriculum with non-cognitive skill building sessions and repeated assessments, provides an opportunity for the initially rejected applicants to improve their potential as medical students before matriculating to RUSM.

Performance of 896 students, who began RUSM after successfully completing MERP, was compared with 3324 directly admitted non-MERP students. Pre-admission criteria (prerequisite GPA (pGPA) and MCAT scores), performance at RUSM (attrition rates prior to semester two and five), and US Medical Licensing Examination (USMLE) Step 1 pass rates were compared for cohorts matriculating to RUSM between January 2007 and May 2010.

As expected, MERP students had lower average MCAT score (20.99 ± 4.18 for MERP and 23.62 ± 4.23 for non-MERP, $p < 0.001$) and average pGPA (2.67 ± 0.38 for MERP and 3.14 ± 0.42 for non-MERP, $p < 0.001$). Despite lower pre-admission credentials, MERP students were more likely to matriculate to semester two. The attrition rate prior to semester two was 5.6% for MERP students, compared to 11.2% for non-MERP students (χ^2 (1, $N = 4220$) $= 24.48$, $p < 0.001$). The rate of attrition prior to semester five was comparable for both groups. Students who achieved an overall score of 80% or above in MERP were significantly more likely than non-MERP students to reach semester two, $\chi^2(1, N = 3633) = 38.411$, $p < 0.001$, and semester five, $\chi^2(1, N = 3633) = 30.806$, $p < 0.001$. Of the 309 MERP top-performers, 100% reached semester two, while 94.2% reached semester five.

Comparing the USMLE step 1 scores revealed that MERP and non-MERP students did not differ significantly on the probability of passing the Step 1 on their first attempt, $\chi^2(1, N = 2405) = 1.228$, $p = 0.268$. Although MERP students averaged below their non-MERP counterparts (211.1 ± 17.4 and 214.8 ± 19.5, $p < 0.001$ for MERP and non-MERP, respectively), this effect size ($d = 0.20$) was less than the pre-existing differences between the two groups on MCAT ($d = 0.72$) and pGPA ($d = 1.04$).

Our data suggests that previous academic performance and career background may underestimate true capacity of an individual as a medical student. Achievements in MERP or similar programs can help predict academic success of potential candidates in medical school.

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Brief Communication

Enhancing Medical Student Diversity through a Premedical Program: A Caribbean School Case Study

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ABSTRACT

Background: Physicians with backgrounds underrepresented in medicine (URiM) are more likely to practice in underserved communities. Recruitment into and assistance during medical education has the potential to increase the number of URiM physicians. This study analyzes URiM students' academic performance at a well-established Caribbean school with and without prior successful completion of the Medical Education Readiness Program (MERP). **Methods:** A retrospective analysis of premedical school requirements and achievements in medical school were performed for URiM students enrolled in Ross University School of Medicine between 2006 and 2012, through either MERP or direct admission. For MERP and non-MERP students, an independent sample two-tailed Student *t*-test was used to compare prerequisite Grade Point Average (p GPA), Medical College Admission Test (MCAT), and The United States Medical Licensing Examination (USMLE) Step 1 scores. Chi-square analysis was performed to compare the attrition rates for MERP and non-MERP URiM students in the first years of medical schools well as USMLE Step 1 pass rates. **Results:** A total of 1299 students entering medical school directly ($n = 981$) or through MERP ($n = 318$) were evaluated. The mean MCAT (19.6 for MERP vs. 21.6 for non-MERP, $P < 0.001$) and prerequisite GPA (2.8 for MERP vs. 3.1 for non-MERP, $P < 0.001$) were significantly lower for the MERP students. A similar percentage of MERP and non-MERP students reached the 2nd year (83.0% and 80.9% respectively, $P = 0.407$) and 3rd year (80.5% and 79.0% respectively, $P = 0.565$) of medical school. USMLE Step 1 pass rates for MERP (90.6%) and non-MERP (92.3%) as well as USMLE Step 1 mean scores (208.9 and 210.0 for MERP and non-MERP, respectively) were also comparable. **Discussion:** MERP-like programs can help URiM students with lower undergraduate scores succeed in medical school.

Keywords: Diversity, pipeline programs, premedical education, student achievement, Underrepresented minorities

WHY MERP?

> The MERP route is something that we, as students, think should be more of a standard as opposed to the exception to the rule. It's a great way to build up your foundation so when you get into medical school, it's not the fire-hose effect with all the information. MERP is the way to go.
>
> **Shannon Stegall**
> **2013 MERP Completion,**
> **2017 AUC graduate**

- ✓ **MERP prepares students for success in medical school**
- ✓ **Students completing the program can use performance in MERP as a predictor of performance in medical school**
- ✓ **Top performers in MERP outperform directly admitted students**

LATEST MERP COHORT AT RUSM (started med school Jan 2024)

RUSM MERP STUDENTS AT A WHITE COAT CEREMONY