Information for the Class of 2020 Regarding the Basic Sciences Formative Exam

What exactly is the post-semester-2 basic sciences exam?
It is a formative assessment of a *sampling* of the clinically relevant foundational basic science content covered in semesters 1 and 2 (see Exam Blueprint on page 2). All students in the class of 2020 are required to take it. It is a timed, 50-question, multiple-choice exam, delivered with ExamSoft and self-administered by students over winter break. The exam will be available on 12/15/16, after the last final exam, and must be completed by 1/9/17. Additional details will follow in an email sent from Nancy Thoma.

What makes this exam different from regular course exams?
Though the results of any exam can be used formatively, i.e., to make changes intended to improve future outcomes, the primary purpose of *summative* exams (e.g., course exams) is to evaluate student learning in order to assign a grade. In most cases, summative exams are high-stakes, i.e., have a high point value. In contrast, the primary purpose of a formative exam is to provide feedback that can be used to ***improve both teaching and learning***. Faculty and students alike enter the educational arena with assumptions and expectations about what is taught and what is learned. Formative exams are opportunities to identify both the "hits" and the "misses."

Synonyms for Formative
Influential, Developmental, Creative, Constructive, Shaping

What are the specific benefits to students?
Simply put: practice and feedback. This exam provides a very low stakes opportunity to gain experience with board-like questions—more integrative, higher-order, clinical vignette style—like those that will be more common on course exams beginning in semester 3. More significantly, unlike in-class exams, which must remain secure, students will have complete access to the questions in order to thoroughly evaluate their performance question by question. In turn, students may use the results of this analysis to guide future study activities, such as, reviewing weak content areas or adapting study methods to improve long-term recall.

Should students study or otherwise prepare for this exam?
No, it would actually be better to ***not*** study. That said we encourage students to take the exam seriously, and for those 80-minutes, do their very best so as to obtain as *realistic* an assessment as possible. The apparent contradiction between those two statements is resolved by remembering that the primary purpose of this exam is to provide formative feedback about long-term ability to recall, apply, and integrate information learned in semesters 1 and 2. This is very relevant to board prep. Studying for the exam, or worse, cramming for the exam, would defeat the purpose and reduce the utility of the feedback.

If the content on this basic sciences exam is foundational to the courses in semesters 3-6, then what does it mean for a student who does not obtain a "high" score?
While it is true that a student who has a strong grasp of the basic science content *will likely* have an easier time learning new information that builds on it, a student who has not *yet* achieved that level of understanding is not, by any means, doomed. A "low" score does not bode poorly for a student's future, but rather presents an opportunity to ask the questions "why?" and "what might I do differently in the future?" Each student enters medical school with different proclivities and different levels of familiarity with the basic sciences, yet, the student who took microbiology as an undergrad is not guaranteed to excel, any more than the one who did not is destined to fail. The same principle holds true for semester 3 and beyond. Some will have to work harder than others to learn some things. Some will need to review foundational content in order to make sense of new material. Some may need to adopt different study methods to become more efficient. This exam is in no way a predictor of future success or failure. In other words, this exam can only provide insight into each student's unique blend of strengths and weaknesses, challenges and opportunities.

Thought for the Day
Every correct *answer is a missed opportunity to learn something new!*

Who to contact for questions

Question Type	Contact
Basic questions about the exam: What? When? Why? How?	Gillian Bice biceg@msu.edu Carol Wilkins mindockc@msu.edu
Technical questions related to ExamSoft	Please be sure to **copy both Nancy Thoma & Alex Seddon** Nancy.Thoma@hc.msu.edu, seddonal@msu.edu
Questions or concerns about how to analyze exam performance, how to interpret the results, and how to get help, as well as advice on how to improve study methods and learning strategies	Academic Advisors http://com.msu.edu/Students/Academic_Career_Guidance/Staff.htm

Exam Blueprint

Course	Number of questions*
ANTR 510 Clinical Human Gross Anatomy and Palpatory Skills	10
PSL 539 Principles of Cell Biology and Pathophysiology	10
BMB 515 Medical Biochemistry and Molecular Biology	3
BMB 527 Medical Genetics	3
MMG 531 Medical Immunology	4
MMG 532 Medical Microbiology	10
PHM 564 Basic Principles of Medical Pharmacology	10
Total	**50**

***Notes**

- Integration: Some questions integrate content from more than one course. In other words, a single vignette (clinical case scenario) could require students to process information from two or more courses in order to arrive at the best answer, including material that may have also been covered in OPC and YAA (e.g., patient history and physical exam findings, basic science concepts and facts, imaging and lab results, etc.). This is not reflected in the table above in which each question is classified by its predominant focus.
- Sampling: As this is only a 50-question exam, it cannot comprehensively assess the entirety of the content taught in the semester 1 and semester 2 courses; it is rather a sampling of that body of content. From the perspective of the student, it is a random sampling—there is no way to predict what will be tested—which is also true of board exams.
- Question style: Many, but not all, are board-style questions. Many, but not all, are higher order questions.