The New MCAT: Look What’s Coming!

RUTH O. BINGHAM
DIRECTOR
PRE-HEALTH/PRE-LAW ADVISING CENTER
UNIVERSITY OF HAWAI‘I AT MĀNOA

BEVERLEY B. CHILDRESS
DIRECTOR
PRE-HEALTH PROFESSIONS PROGRAMS
AUBURN UNIVERSITY

JEN PAGE
DIRECTOR
MCAT PREPARATION PRODUCTS
ASSOCIATION OF AMERICAN MEDICAL COLLEGES

8 OCTOBER 2013 ◇ NACADA ◇ SALT LAKE CITY
How is MCAT\textsuperscript{2015} impacting your pre-health advising?
Session Goals

- Learn:
  - how medical education is changing
  - what’s new about MCAT^2015
  - how students can succeed in this new paradigm
  - ways to help your student navigate the changes
- Share
  - your experiences and
  - your concerns
- Find
  - answers to your questions
- Take home:
  - a list of available resources
  - tips for advising your pre-med students
No standards
No regulation
Apprentice-like system
Little to no teaching of modern sciences
Little to no connection between academic learning and clinical practice
Few teaching hospitals
The “Flexner Report” of 1910

- By Abraham Flexner
- 1st Carnegie Foundation study on medical education
- Visited all medical schools
- Used Johns Hopkins as the model
- Developed the 2+2 traditional curriculum
The Medical College Admission Test (MCAT)

- 1928-46 The Moss Test
- 1946-48 Professional School Aptitude Test
- 1948-77 Medical College Admission Test, MCAT
- 1977-91 MCAT
- 1992-2014 Current MCAT
- 2015: The New MCAT

2015
### Current Issues in Medical Education

<table>
<thead>
<tr>
<th>Traditional Approach</th>
<th>Current Approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Grades &amp; MCAT scores</td>
<td>• Grades &amp; MCAT scores</td>
</tr>
<tr>
<td>• Brick-&amp;-mortar institutions</td>
<td>• Information explosion &amp; distance education</td>
</tr>
<tr>
<td>• Standardized 2+2 curriculum</td>
<td>• Early clinical exposure, Systems-based, PBL, hybrids, etc.</td>
</tr>
<tr>
<td>• Course-based preparation</td>
<td>• Competencies-based preparation</td>
</tr>
<tr>
<td>• Focus on natural sciences (plus reading &amp; writing)</td>
<td>• Includes social science</td>
</tr>
<tr>
<td>• 1-on-1 or panel interviews</td>
<td>• Holistic review &amp; group or multiple mini-interviews (MMIs)</td>
</tr>
<tr>
<td>• Hierarchical systems</td>
<td>• Interdisciplinary team systems</td>
</tr>
<tr>
<td>• Local, community-centered practice</td>
<td>• Globalization: mobile populations, public health, diversity</td>
</tr>
</tbody>
</table>
Who will take the new MCAT exam?

- Final recommendations approved: November 2011
- Last dates for current exam: Sept 2012
- More prep materials released: Spring 2014
- New exam goes live in spring: Jan 2015
- Spring 2015
- 2012 entering freshman take 2015 MCAT as Juniors
- First Med School Class selected with new MCAT: Fall 2016
<table>
<thead>
<tr>
<th>Current MCAT</th>
<th># of Test Items</th>
<th>Testing Time (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological Sciences</td>
<td>52</td>
<td>70</td>
</tr>
<tr>
<td>Physical Sciences</td>
<td>52</td>
<td>70</td>
</tr>
<tr>
<td>Verbal Reasoning</td>
<td>40</td>
<td>60</td>
</tr>
<tr>
<td>Trial Section</td>
<td>32</td>
<td>45</td>
</tr>
<tr>
<td><strong>Total Content Time</strong></td>
<td><strong>4 hours, 5 min</strong></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>MCAT&lt;sup&gt;2015&lt;/sup&gt;</th>
<th># of Test Items</th>
<th>Testing Time (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biological &amp; Biochemical Foundations of Living Systems</td>
<td>67</td>
<td>95</td>
</tr>
<tr>
<td>Critical Analysis &amp; Reasoning Skills</td>
<td>60</td>
<td>90</td>
</tr>
<tr>
<td>Lunch Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chemical &amp; Physical Foundations of Biological Systems</td>
<td>67</td>
<td>95</td>
</tr>
<tr>
<td>Psychological, Social, &amp; Biological Foundations of Behavior</td>
<td>67</td>
<td>95</td>
</tr>
<tr>
<td><strong>Total Content Time</strong></td>
<td><strong>6 hours, 15 min</strong></td>
<td></td>
</tr>
</tbody>
</table>
MCAT\textsuperscript{2015} – 4 Sections, 4 Scores

- Biological & Biochemical Foundations of Living Systems
- Chemical & Physical Foundations of Biological Systems
- Psychological, Social, & Biological Foundations of Behavior
- Critical Analysis & Reasoning Skills
Test Content Hierarchy of “Competencies”

Test Section I

- Foundational Concept 1
  - Content Category 1A
  - Topics
    - Subtopics
      - Sub-subtopics
  - Content Category 1B
- Foundational Concept 2
  - Content Category 1C
- Foundational Concept 3
  - Content Category 1D
I. Biological & Biochemical Foundations...

FC1: Biomolecules have unique properties that determine how they contribute to the structure and function of cells ...

CC A: Structure and function of proteins and their constituent amino acids

Topic 1: Amino Acids

Subtopic 1: Description
Subtopic 2: Reactions

1a: Absolute configuration at the $\alpha$ position
1b: Amino Acids as dipolar ions
1c: Classifications

1c1: Acidic or basic
1c2: Hydrophobic or hydrophilic
Concept 1

- Biomolecules have unique properties that determine how they contribute to the structure and function of cells, and how they participate in the processes necessary to maintain life.

Concept 2

- Highly-organized assemblies of molecules, cells, and organs interact to carry out the functions of living organisms.

Concept 3

- Complex systems of tissues and organs sense the internal and external environments of multicellular organisms, and through integrated functioning, maintain a stable internal environment within an ever-changing external environment.
Exam content in this section typically taught in:

- Introductory biology (65%)
- General chemistry (4%)
- Organic chemistry (6%)
- First semester biochemistry (25%)
<table>
<thead>
<tr>
<th>Concept 4</th>
<th>Concept 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Complex living organisms transport materials, sense their environment, process signals, and respond to changes using processes that can be understood in terms of physical principles.</td>
<td>• The principles that govern chemical interactions and reactions form the basis for a broader understanding of the molecular dynamics of living systems.</td>
</tr>
</tbody>
</table>
Chemical & Physical Foundations of Biological Systems

Exam content in this section typically taught in:

- Introductory biology (2%)
- General chemistry (33%)
- Organic chemistry (15%)
- Introductory physics (25%)
- First semester biochemistry (25%)
<table>
<thead>
<tr>
<th>Concept 6</th>
<th>Concept 7</th>
<th>Concept 8</th>
<th>Concept 9</th>
<th>Concept 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Biological, psychological, and socio-cultural factors influence the ways that individuals perceive, think about, and react to the world.</td>
<td>• Biological, psychological, and socio-cultural factors influence behavior and behavior change.</td>
<td>• Psychological, socio-cultural, and biological factors influence the way we think about ourselves and others.</td>
<td>• Cultural and social differences influence well-being.</td>
<td>• Social stratification and access to resources influence well-being.</td>
</tr>
</tbody>
</table>
Exam content in this section typically taught in:

- Introductory **psychology** (60%)
- Introductory **sociology** (30%)
- Introductory **biology** (10%)
Critical Analysis & Reasoning Skills

- Foundations of Comprehension (30%)
- Reasoning Within the Text (30%)
- Reasoning Beyond the Text (40%)
Critical Analysis & Reasoning Skills

Passages from humanities & social sciences:
- Ethics
- Philosophy
- Studies in diverse cultures
- Population health

*NO natural science passages
*NO specific knowledge required
Scientific Inquiry & Reasoning Skills (SIRS)

Knowledge of Scientific Concepts & Principles

Scientific Reasoning & Evidence-based Problem Solving

Reasoning About the Design and Execution of Research

Data-based and Statistical Reasoning
Requires you to combine

- knowledge of foundational concepts in the biological and biochemical sciences &
- SIRS (scientific inquiry, reasoning, and research and statistics skills)

... that demonstrate readiness for medical school.
Combining SIRS & Concepts

<table>
<thead>
<tr>
<th>Foundational Concept 1</th>
<th>Foundational Concept 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Category 1A</td>
<td>Content Category 2A</td>
</tr>
<tr>
<td></td>
<td>Content Category 1B</td>
</tr>
<tr>
<td></td>
<td>Content Category 2B</td>
</tr>
<tr>
<td></td>
<td>Content Category 1C</td>
</tr>
<tr>
<td></td>
<td>Content Category 2C</td>
</tr>
</tbody>
</table>

- Each cell represents the point at which foundational concepts, content categories, and scientific inquiry and reasoning skills cross.

- Test questions are written at the **intersections of knowledge and skills**.
New Testing Areas

- **Interdisciplinary problem solving**: (SIRS)
- **Biochemistry**: ~25% of the natural science sections
- **Behavioral Sciences**: biology, psychology, sociology
- **Statistics**: applied (vs. theoretical); calculus is *not* required
- **Research methods**: from natural and social science practices
MCAT\textsuperscript{2015} – 4 Sections, 4 Scores

1. Biological & Biochemical Foundations of Living Systems
2. Critical Analysis & Reasoning Skills
3. Chemical & Physical Foundations of Biological Systems
4. Psychological, Social, & Biological Foundations of Behavior
The Auburn University MCAT Committee Recommendations

- **Change Student Attitudes:**
  - Stress importance of preparing for and taking the MCAT early
  - Provide multiple opportunities for students to take practice exams
  - Ask current applicants to share their experiences

- **MCAT Preparation Tips**
  - Email premedical students regularly with updates about MCAT content, preparation strategies, available resources to prepare well, etc.
    - Include list of topics taught in each course that students will see on MCAT
    - Explain how this material will be assessed on MCAT (ex., no equation sheets or calculators, etc.)
    - Stress understanding concepts rather than memorizing facts
    - Give general strategic advice for each section
    - Provide advice about when and how long to prepare for the MCAT and when to take the actual exam
The Auburn University MCAT Committee Recommendations continued

- **MCAT Preparation Tips**
  - Provide premedical sophomores with sample passages accompanied by questions (one set for each test section)
  - Provide physics and general chemistry professors with equation sheets, showing them which equations are found on the MCAT
  - Support opening of a Prometric Testing Center in Auburn
  - Encourage faculty to post online review materials and conduct review sessions for students preparing for the MCAT
University of Hawai‘i at Mānoa

- **UHM MCAT\textsuperscript{2015} Committee:**
  - Convened by the Vice-Chancellor for Academic Affairs
- **Two charges:**
  1. Identify which courses pre-med students should take to prepare for MCAT\textsuperscript{2015}
  2. Re-examine the pre-med track and make recommendations to the VCAA
- **Approach to #1:**
  - Survey of which courses cover which competencies
    - Results are preliminary, recommendations tentative
## Recommended Courses

### University of Hawai‘i: Mānoa

- Math: Trigonometry (Calculus I recommended)
  - Chemistry
    - General Chemistry I & II, plus Labs
    - Organic Chemistry I & II, plus Labs
  - Biology
    - Introduction to Biology I & II, plus Labs
    - (Cell & Molecular Biology, plus Lab - UHM)
  - Physics
    - College Physics I and II, plus Labs
  - Additional Upper Division Electives

- Biochemistry (400-level for UHM)
- Psychology
  - Introduction to Psychology
  - Statistics
  - Research Methods
- Sociology

### Auburn University

- Math: Calculus I and Statistics
- Chemistry
  - General Chemistry I and II, plus Labs
  - Organic Chemistry I and II, plus Labs
- Biology
  - Principles of Biology I and II, plus Labs
  - Genetics plus Lab
- Physics
  - College Physics I and II, plus Labs
- Additional Upper Division Electives

- Biochemistry I and II (5000-level)
- Introduction to Psychology
- Sociology
- Special Topics (Research)
<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Check List</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2021</td>
<td>Fall 2021</td>
<td>Fall 2021</td>
<td>Fall 2021</td>
<td></td>
</tr>
<tr>
<td>Biol I+L</td>
<td>O-Chem I+L</td>
<td>Biochem 400</td>
<td>Interviews</td>
<td></td>
</tr>
<tr>
<td>Gen Chem I+L</td>
<td>Research Methods</td>
<td>Statistics</td>
<td>Decisions</td>
<td></td>
</tr>
<tr>
<td>Math Prep</td>
<td>Sociology 100</td>
<td></td>
<td>Graduate!</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Study for MCAT</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credits: 11</td>
<td>Credits: 11</td>
<td>Credits: 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring 2021</td>
<td>Spring 2021</td>
<td>Spring 2021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biol II+L</td>
<td>Cell &amp; Molec. +L</td>
<td>MCAT&lt;sup&gt;2015&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gen Chem II+L</td>
<td>O-Chem +L</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Calc I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psych 100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credits: 15</td>
<td>Credits:</td>
<td>Credits: 8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summer 2021</td>
<td>Summer 2021</td>
<td>Summer 2021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phys I+L</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phys II+L</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Credits: 8</td>
<td>Credits: 19</td>
<td>Credits: 7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Credits:</td>
<td>34 Total Credits:</td>
<td>53 Total Credits:</td>
<td>Enter Med School!</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Remember that this plan is incomplete without checking this with all of your advisors!
What are your:

- Questions?
- Experiences?
- Concerns?
- Tips?
Resources

The Only Official Resource:

Association of American Medical Colleges (AAMC)

- 1998: AAMC’s Medical School Objectives
- 2008-09: MCAT Review #5 (“MR5”)
- See “References & Resources”
  - Websites, publications, webcasts

www.aamc.org/mcat2015admins
Using the *Preview Guide*

- Remember – test material is NOT final
- Details for all sections
  - SIRS
  - Foundational Concepts for each section
  - Detailed outlines of finer level of concepts and sub-topics
- Sample items with answers

Example of Science Disciplines

**EXAMPLE**

**Fatty Acid Catabolism (BIO, BC)**
- General
- Digestion/mobilization/transport
- Oxidation
  - Saturated fats
  - Unsaturated fats
- Ketone bodies
- Net molecular and energetic results of respiration processes
- Anabolism of fats (BIO)
- Non-template synthesis/biosynthesis of lipids and polysaccharides (BIO)
- Metabolism of proteins (BIO)
Using the *Preview Guide*

- Shows combination of concepts tested and Scientific Inquiry and Reasoning Skills (SIRS)
- Sample items demonstrate how this works

The Preview Guide for MCAT

5) A scientist proposed that the $^{32}$P label was entering PE molecules by direct exchange (swapping phosphate groups with those found in solution) and NOT through synthesis of new PE by bacterial cells. What experimental modification can show this is NOT the case?

A. Introduce TNBS prior to pulsing with $^{32}$PO$_4^{3-}$.
B. Measure the rate of incorporation of $^{32}$PO$_4^{3-}$ into acellular PE.
C. Use mouse cell cultures instead of bacterial cells.
D. Decrease the concentration of $^{32}$PO$_4^{3-}$ and observe the effect on incorporation rate.

Answer: B
Foundational Concept: 5
Content Category: 5D
Skill: 3
### Course Mapping Tool for MCAT2015

<table>
<thead>
<tr>
<th>SIRS</th>
<th>Foundational Concept</th>
<th>Content Category</th>
<th>Topic</th>
<th>Topic taught at your school</th>
<th>Topic On Current MCAT</th>
<th>Course List at Your School</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1A</td>
<td>Amino Acids</td>
<td>NO!</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1A</td>
<td>Protein Structure</td>
<td>NO!</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1A</td>
<td>Non-Enzymatic Protein Function</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1A</td>
<td>Enzyme Structure and Function</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1A</td>
<td>Control of Enzyme Activity</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1B</td>
<td>Nucleic Acid Structure and Function</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1B</td>
<td>DNA Replication</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1B</td>
<td>Repair of DNA</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1B</td>
<td>Genetic Code</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1B</td>
<td>Transcription</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1B</td>
<td>Translation</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1B</td>
<td>Eukaryotic Chromosome Organization</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1B</td>
<td>Control of Gene Expression in Prokaryotes</td>
<td>NO!</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1B</td>
<td>Control of Gene Expression in Eukaryotes</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1B</td>
<td>Recombinant DNA and Biotechnology</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1C</td>
<td>Evidence that DNA is Hereditary Material</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>FC1 (E5* and parts of E8*)</td>
<td>CC1C</td>
<td>Evolution</td>
<td>NO!</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
Khan Academy Video Contest
MCAT Video Competition Winners

www.khanacademy.org/about/med-competition
Pre-health Collection within MedEdPORTAL’s iCollaborative

- Online repository of instructional materials recommended for teaching pre-health competencies
- 100+ pre-health teaching resources in the collection, including self-study materials
- Searchable by MCAT$^{2015}$ Foundational Concepts
- Contribute resources, refer the ones you use and share comments.

www.mededportal.org/icollaborative/pre-health
MCAT2015 Q-UPP eNewsletter

Access the archive issues, webinar recordings, and Q&A transcripts

www.aamc.org/mcat2015/qupp
MCAT2015 Q-UPP eNewsletter

Welcome/Introduction

Summary of most recent quarter’s activity

Timeline of upcoming project progress reports by quarter

MCAT2015® Q-UPP:
A Quarterly Update of Progress and Projections for the MCAT2015 Exam Issue 2, Vol. 1

Happy Summer, everyone! Welcome to the second issue of Q-UPP, our new eNewsletter dedicated to keeping you up-to-date on the progress toward projected goals and tasks for the MCAT2015 exam.

In this issue, you’ll find a brief update on the projects we have completed April - June of 2013. In the right column, you’ll find a list of items that are “In the Works” and the projected quarter in which we expect to report our progress for these tasks. Resources are always available online at www.aamc.org/maicat2015admins.

We’ve been busy with the launch of the Khan Academy collaboration, contributions to the May issue of Academic Medicine and work on the new Psychology and Sociology textbook resource.

We also announced the winners of the first Call for Submissions for the Pre-health Collection of MedEdPORTAL’s iCollaborative. The links to the winning entries are listed below. Please note that the next Call for Submissions deadline is August 28, 2013. Winners of the best submission in each of the six disciplines receive a $3750 prize!

Please feel free to share your comments or ideas with us at mcat2015@aamc.org.

Sincerely,
The MCAT2015 Team


• Khan Academy Collaboration
  On April 2, AAMC announced a new collaboration with Khan Academy and

In the Works:
July - September 2013
• Announce winners of the Khan Academy competition and timeline for video availability
• Announce winners for the iCollaborative Call for Submissions
• Design a multi-institution study to determine how well scores from the Psychological, Social, and Biological Foundations of Behavior (PSBB) section predict important medical student outcomes
• Hold MCAT® Webinar Q&A on July 29 – registration is now open!

October - December 2013
• Announce 2013 Trial Section volunteer rates
• Announce additional 2014 test administration dates
• Hold MCAT® Webinar Q&A
January - March 2014
• Publish The Official Guide to the MCAT® Exam
• Continue Volunteer Trial Section administration
• Hold MCAT® Webinar Q&A
April - June 2014
• Report Trial Section group differences
• Continue work on score scale and reporting conventions
• Solicit new materials for the Pre-health Collection within MedEdPORTAL’s iCollaborative
• Hold MCAT® Webinar Q&A
July - September 2014
• Announce 2015 testing dates
• Announce score scale and reporting conventions for 2015 exam
• Begin MCAT validity study
• Hold MCAT® Webinar Q&A
October - December 2014
• Announce 2014 Trial Section volunteer rates
• Publish final MCAT® sample tests
• Post MCAT Essentials PDF online
• Hold MCAT® Webinar Q&A
January - March 2015
• Final administration of the current exam, with final test data
Redesigning the MCAT Exam: Balancing Multiple Perspectives
Richard M. Schwartzstein, MD; Gary C. Rosenfeld, PhD; Robert Hilborn, PhD; Saundra Herndon Oyewole, PhD; Karen Mitchell, PhD

The MCAT Exam: Comparing the 1991 and the 2015 Exams
Marc Kroopnick, MEng, PhD
### AM Last Page: The MCAT Exam: Comparing the 1991 and 2015 Exams

Marc Kroopnick, MEng, PhD, Manager, MCAT<sup>2015</sup> Development and Psychometrics, Association of American Medical Colleges (AAMC)

In the spring of 2015, potential physicians will take the MCAT<sup>2015</sup> exam, the newest version of the MCAT exam. The MRS committee (the advisory committee for the MCAT<sup>2015</sup> exam) redesigned the exam to test the academic competencies* that tomorrow's physicians will need to know to succeed in medical school. The design is based on survey responses from over 2,700 medical school and baccalaureate faculty members and feedback from expert panelists and participants in over 90 outreach events. The MCAT<sup>2015</sup> exam will, like the current exam (the MCAT<sup>1991</sup> exam, introduced in 1991), test concepts in the natural sciences, as well as skills in critical analysis and reasoning. Unlike the MCAT<sup>1991</sup> exam, the MCAT<sup>2015</sup> exam will also cover concepts from the behavioral and social sciences. The table below highlights the features the MCAT<sup>2015</sup> exam shares with the MCAT<sup>1991</sup> exam, as well as its new features.

<table>
<thead>
<tr>
<th>How Are the MCAT&lt;sup&gt;1991&lt;/sup&gt; and MCAT&lt;sup&gt;2015&lt;/sup&gt; Exams the Same?</th>
<th>What's Different on the MCAT&lt;sup&gt;2015&lt;/sup&gt; Exam?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content</strong></td>
<td><strong>Natural Sciences</strong></td>
</tr>
<tr>
<td>Concepts from biology, general chemistry, organic chemistry, and physics that are rated as important for success in medical school are tested; in fact, approximately 75% of questions on the MCAT&lt;sup&gt;2015&lt;/sup&gt; exam test concepts that also appear on the MCAT&lt;sup&gt;1991&lt;/sup&gt; exam.</td>
<td>Biochemistry concepts that are rated as important for success in medical school are tested.</td>
</tr>
<tr>
<td>Questions require examinees to demonstrate their scientific reasoning and problem-solving skills.</td>
<td>Questions test scientific competencies* by asking examinees to solve problems about biological and living systems and to integrate concepts from multiple disciplines.</td>
</tr>
<tr>
<td>Two test sections focus on natural sciences concepts.</td>
<td>Questions require examinees to use research methods and statistical skills to solve problems in the same ways that natural scientists do.</td>
</tr>
<tr>
<td><strong>Behavioral and Social Sciences</strong></td>
<td></td>
</tr>
<tr>
<td>Nothing. This is a brand new test section.</td>
<td></td>
</tr>
</tbody>
</table>

---

www.aamc.org/mcat2015/admins
Sociology and Psychology Textbook Resource

www.aamc.org/mcat2015/admins
### Sociology and Psychology Textbook Resources for the MCAT® Exam

This resource was updated on June 20, 2013.

If you are a publisher of an introductory textbook of sociology or psychology and would like to add your publication and information to this reference document, please e-mail mcat2015@aamc.org.

MCAT® is a program of the Association of American Medical Colleges and related trademarks owned by the Association include Medical College Admission Test, MCAT, and MCAT2015.

<table>
<thead>
<tr>
<th>MCAT2015 Foundational Concept</th>
<th>MCAT2015 Content Category</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>FC6</td>
<td>CC6C</td>
<td>Sensing the Environment</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6A</td>
<td>Sensory Processing</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6A</td>
<td>Vision</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6A</td>
<td>Hearing</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6A</td>
<td>Other Senses</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6A</td>
<td>Perception</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6B</td>
<td>Making Sense of the Environment</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6B</td>
<td>Attention</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6B</td>
<td>Cognition</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6B</td>
<td>Consciousness</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6B</td>
<td>Memory</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6B</td>
<td>Language</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6C</td>
<td>Responding to the world</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6C</td>
<td>Emotion</td>
</tr>
<tr>
<td>FC6</td>
<td>CC6C</td>
<td>Stress</td>
</tr>
<tr>
<td>FC7</td>
<td>Biological, psychological, and socio-cultural factors influence the ways that individuals perceive, think about, and react to the world.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Avisar, Choi, DeSais, Jurukovsky, Wise, Rye, et. al. (2013.)</th>
<th>Biological, thousand oaks, CA Sage OpenStax College.</th>
</tr>
</thead>
</table>

All references to textbooks and corresponding content information were self-reported by the publishers. AAMC has not verified the information for accuracy nor relevance. This information is not intended to prescribe a program of study for the MCAT® exam, nor does use of this information guarantee success on the exam.
<table>
<thead>
<tr>
<th>AAMC Presentations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The MCAT&lt;sup&gt;2015&lt;/sup&gt; Exam: The Basics for Students</strong></td>
</tr>
<tr>
<td>• Presentation Slides</td>
</tr>
<tr>
<td>• Speaker Notes</td>
</tr>
<tr>
<td><strong>The MCAT&lt;sup&gt;2015&lt;/sup&gt; Exam: The Basics for Advisors</strong></td>
</tr>
<tr>
<td>• Presentation Slides</td>
</tr>
<tr>
<td>• Speaker Notes</td>
</tr>
<tr>
<td>• Handouts</td>
</tr>
</tbody>
</table>
Additional Resources

• By 2014:
  • *Official Guide to MCAT*<sup>2015</sup>
  • Practice test

• By 2015:
  • Additional practice test
Financial Support For Students

Will continue:
- Fee Assistance Program (FAP)
- Free test prep resources
- Free Summer Medical and Dental Education Program

More info at:
www.aamc.org/fap
www.smdep.org
Thank You for Coming!

Please remember to submit your evaluation

Ruth O. Bingham, Director  
University of Hawai‘i at Mānoa  
Pre-Health/Pre-Law Advising Center

Beverley Childress, Director  
Auburn University  
Pre-Health Professions Program

Jen Page, Director  
MCAT Preparation Products  
Association of American Medical Colleges