

Block 2 The Human Blueprint
Case SOM WR2
Review and Action Plan Class of 2011
Block Leader: Georgia L. Wiesner, MD

Primary Content Areas: Cancer Biology, Development (Embryology), Endocrine, Genetics, Molecular Biology, Reproductive Biology.

Longitudinal Content Areas: Cell Biology, Histopathology, Anatomy

Design Team Members:

- Joseph Bokar, MD, PhD (Cancer Biology)
- Jim Bruzik, PhD (Molecular Biology)
- Ron Conlon, PhD (Development)
- Angelina Gangestad, MD (Reproductive Biology)
- Smitha Krishnamurthi, MD (Cancer Biology)
- James Liu, MD (Reproductive Biology)
- Kathleen Molyneaux (Development)
- Thomas Murphy, MD (Endocrine)
- Derek Neilson, MD (Genetics and Clinical Immersion)
- Georgia Wiesner, MD (Genetics and Lead)

Block 2 curriculum was presented for the second time to Case Medical Students from August 20 to November 2 2007. Several areas had been targeted for improvement in the curriculum based on the feedback from Class of 2010, Block 2 facilitators, WR2 Block leaders, and the Block 2 design team:

1. Shorten the length of the block from 12 to 11 weeks.
2. Improve the coherency of the cell biology and endocrine teaching.
3. Improve the integration, logic, and organization of the disciplines within the block.
4. Strengthen the medium sized group teaching.
5. Implement a student assessment process using descriptors of competence.

Implementation:

1. Shorten the length of the block from 12 to 11 weeks.

The reduction of time was accomplished primarily by rewriting and revising inquiry cases and/or moving the learning objectives to self-study times.

2. Improve the coherency of the cell biology and endocrine teaching.

The class of 2010 found the Endocrine content was overly dense, presented without background information, and had uneven facilitator support. Upon review, the design team felt that

presenting endocrine along with basic cellular biology teaching early the block would correct these concerns. To this end, cell biology basic lectures were increased and better integrated with basic endocrine functions. In order to accommodate the re-ordering of endocrine and cell biology, adjustments were made in reproductive biology, development and genetics content causing some disruption of content in these disciplines. Thus, integration of all the disciplines is a necessary goal for Class year 2012.

3. Improve the integration, logic, and organization of the disciplines within the block.

The overall organization of Fall 2006 curriculum was conceptually sound. However, communication of the goals, content, and work required by the student needed improvement. A Block 2 Course Guide was posted in the eCurriculum that compiled information about the design team, basic concepts for each week's theme, important dates, and contact information.

4. Strengthen the medium sized group teaching.

The Block 2 medium sized groups are lead by a basic scientist and clinician, allowing direct teaching by content experts. However, the 2006 curriculum was rated poorly primarily because of faculty inconsistency in engaging the students in the learning process. Improving the medium sized group teaching was a priority for 2007, as the design team felt that fostering student inquiry with specialists was essential for teaching the basic science Block 2 concepts. The curriculum was extensively revised for each medium sized group session and standard PowerPoint presentations were developed. Further, special sessions were developed for the teaching faculty in which the goals, content, materials available for each session was reviewed. These sessions were also focused on improving and developing teaching skills for the faculty.

5. Implement a student assessment process using descriptors of competence.

During the presentation of the block, the design team worked with Dr. Klara Papp to improve and standardize the grading and assessment of the SSEQ examination. Under this assessment, students would be rated into Meets, Borderline, and Does Not Meet categories. Unlike a Pass/Fail system, the design teams would be able to better identify students who may need educational support or other special attention. A sub-committee of design team members developed the criteria for applying these new criteria to the 2007 SSEQ examination.

Results for Yr 2007 Class of 2011

The following tables show the average student rating of Block 2 for Class years 2010 and 2011 on the overall rating questions (Table 1) and learning activities (Table 2). The general ratings did not substantially differ on most elements, particularly in the overall quality. However, there was no measurable improvement in organization and coherency as well as a decrease in ratings for the student's understanding of the assessment process. Thus, there is room for improvement in overall integration and organization of the Block. In addition, guidance of the students in the overall expectations of the block is an area for improvement.

Table 2 shows the ratings of the medium sized groups, large groups, inquiry groups and the clinical immersion week. The medium sized groups substantially improved from good to very good, while the other learning activities continued to be rated in the excellent to outstanding range.

Table 1 Overall Ratings	2010 Mean	2011 Mean
01 Clarity of goals, Obj, expectations	4.0	3.9
02 Organization & coherency	3.6	3.7
03 How well goals were met	4.2	3.9
04 Approachability of faculty	5.2	4.5
05 Lrg group leaders (lecturers)	4.6	4.1
06 IQ facilitator	5.3	5.0
07 Understanding Assessment	4.2	3.7
08 Learning concepts of the sciences basic to medicine	4.6	n/a
09 OVERALL QUALITY	4.3	4.0

Table 2 Learning Activity Ratings

Independently	6.3	6.5
Case IQ Groups	5.3	5.2
Large Group Sessions	4.9	4.1
Medium Group Sessions	3.0	4.3
Clinical Immersion Week (multiple measures)	-----	3.3 to 4.9

Table 3 shows the ratings for each specific Block 2 discipline and Block 7 structure for Class Of 2011. While we do not have numerical ratings for comparison, Cancer was rated excellent and Endocrine, Molecular Biology, and Reproductive Biology were rated very good. Thus, the adjustments made in order and content in the Endocrine discipline improved the teaching in this area. However, Genetics and Development were rated as good, demonstrating an opportunity for improvement in these disciplines.

Table 3 Discipline Ratings

	2006	2007
Cancer Biology	n/a	5.0
Development	n/a	3.1
Endocrine	n/a	4.8
Genetics	n/a	3.4
Molecular Biology	n/a	4.2
Reproductive Biology	n/a	4.3
Anatomy	n/a	3.0
Histopathology	n/a	3.7

Rating: Poor=1, Fair=2, Good =3, Very Good=4, Excellent =5, Outstanding=6

Student Assessment/SSEQ Examination

The SSEQ final examination consisted of five clinical scenarios with 4 to 5 subquestions for a total of 19 subquestions: 3 subquestions were devoted to Cancer, Endocrine, Genetics, Molecular Biology, and Reproduction, 2 subquestions in Development, and 1 subquestion each in cell biology and histopathology. Most students used all the available time to complete the examination; 15 minutes additional time was granted. The answers for each subquestion was read and graded by one design team member and rated as Meets Expectations, Borderline for Meeting Expectations and Does Not Meet Expectations. Each grader devoted approximately 8 to 10 hours grading one subquestion. A remediation process was developed for students who were rated as Does Not Meet for the entire exam.

Recommendations for Block 2 Class of 2012 in 2008

1. Reconstruct and refine week 1 to focus on basic scientific and cell biology concepts. The changes to be considered include eliminating the 1st inquiry case and re assigning the first day contact time to orientation lectures, re-writing new cases to support basic cell biology rather than cancer and developing a study guide to be completed the weekend before the block.
2. Improve the communication about the goals and expectations for students by editing the Block 2 Course Guide with a set of "trackable" goals for each week; use the eCurriculum to post the goals and expectations; add a Overview lecture to the beginning of the block; work with faculty to use goals as a way to frame each lecture.
3. Work with the Assessment Committee to assist students in preparing and studying for the SSEQ and MCQ examinations.
4. Continue progress in integration of disciplines of Block 2 in Inquiry Groups and Interactive Sessions.
5. Re-evaluate Genetic and Development content throughout the Block; improve the logic of the order of presentation and integration with all other disciplines. Consider options to bring Development content longitudinally to each block, where these concepts can support the teaching of subsequent concepts.