

Case Western Reserve University – University Program Medical School

Block 7: Action Plan 2018-2019

Year 1 (July – May) 2018-2019

<p>Becoming A Doctor</p> <p>Block 1 (5 Weeks)</p> <p>Population Health, Epidemiology, Biostatistics, Health Disparities</p> <p>Field Experiences Assessment Week</p>	<p>2 Weeks Steps2Success</p>	<p>The Human Blueprint</p> <p>Block 2 (11 Weeks)</p> <p>Endocrinology, Reproduction, Development, Genetics, Molecular Biology, Cancer Biology</p> <p><u>Integrative Week</u> Assessment Week</p>	<p>Food to Fuel</p> <p>Block 3 (9 Weeks)</p> <p>Gastroenterology, Nutrition, Biochemistry</p> <p>Assessment Week</p>	<p>Homeostasis</p> <p>Block 4 (14 Weeks)</p> <p>Cardiovascular, Pulmonary, Renal, Cell Physiology and Pharmacology</p> <p><u>Clinical Immersion Week</u> Assessment Week</p>
<p>Structure (Anatomy, Radiology and Histopathology)</p> <p><u>Foundations of Clinical Medicine</u> (Tuesday Seminars, Communications, Physical Diagnosis, Patient Based Experiences)</p>				

1. Course Description:

Block 7, or “Structure”, is a longitudinal block that starts in Block 1 and continues through Block 6. The major components of Block 7 and the faculty leader(s) for each include: Anatomy (Dr. Wish-Baratz), Histology/Histopathology (Dr. Ziats) and Radiology (Dr. Herrmann). Block 7 integrates basic and clinical concepts of the three disciplines and a thorough understanding of each will form the framework for the basic mechanisms that underlie health and disease. *The overall learning objective of this longitudinal block is to develop an understanding of macro-, micro- and ultramicroscopic structure, nomenclature, imaging techniques and the respective functions of normal and diseased organs, tissues and cells and to view these tissues directly and as accomplished in the clinical setting.* It is believed by many that all medical science flows from an instinctive appreciation of physiology and pathophysiology.

However, a sophisticated knowledge of anatomy/radiology, biochemistry, cell biology, and basic genetics are requisite for understanding normal physiology as well as pathophysiology. The knowledge of normal gross and microscopic

anatomy, as well as imaging (radiology) of these organs and tissues is necessary for appreciation of the relationships between altered structure and disturbed function. Thus, Block 7 is the bridge from the normal to the diseased, and begins the transition from classroom to ward. If you conceptually master the principles of anatomy/radiology, cell biology, histology, genetics, physiology and pathology (at least), you will have mastered the science of medicine. This knowledge will be necessary to differentiate the variability (and artifacts) of normal tissues and organs from diseased ones.

Weekly Schedule: In Blocks 2, 3, and 4, the official class time in Block 7 is: for HP, 10 - noon on Tuesdays; and for GARLA, 10 - noon on either Tuesdays OR Thursdays. During the second year (Blocks 5 and 6), HP class time is: 8-10 a.m. on Tuesdays and GARLA class time is either 8-10 a.m. on Tuesdays OR Thursdays. In addition, faculty experts in Histology and Pathology will be available from 8-10am on alternate Thursdays during your first year for reviews, or content-derived sessions. Anatomy lectures will be posted on canvas. This schedule may vary so please be sure to consult the weekly schedule on Canvas. (Note: attendance is not required at HP sessions on Thursday mornings, but you are responsible for content.)

Prior to Block 2, a dissection boot camp will set the stage for GARLA. This two week intensive course will take place on Monday – Thursday either in the morning OR in the afternoon. On the first Friday of the Boot Camp, there will be a formative practical assessment in the morning and on the final Friday there will be a summative practical exam in the morning and the donor memorial service in the afternoon.

Be sure to consult the weekly schedule on Canvas. The format on Tuesdays will be laboratory or interactive sessions.

Below are the schedules for the Boot camp and a sample schedule for a week during your first year***.

Anatomy Bootcamp											
Group A (92)	8-8:50am	Dissection Orientation	Dissection Orientation	Dissection Orientation	Dissection Orientation	Formative Practical (Group 1 + 2)	Dissection Orientation	Dissection Orientation	Dissection Orientation	Dissection Orientation	Cumulative Summative Practical (Group 1 + 2)
	9-10:50am	Lab	Lab	Lab	Lab		Lab	Lab	Lab	Lab	
	11-11:50am	Peer Teaching	Peer Teaching	Peer Teaching	Peer Teaching		Peer Teaching	Peer Teaching	Peer Teaching	Peer Teaching	
Lunch											
Group B (92)	1-1:50pm	Dissection Orientation	Dissection Orientation	Dissection Orientation	Dissection Orientation		Dissection Orientation	Dissection Orientation	Dissection Orientation	Dissection Orientation	Required Memorial Service at Amasa Stone Chapel
	2-3:50pm	Lab	Lab	Lab	Lab		Lab	Lab	Lab	Lab	
	4-4:50pm	Peer Teaching	Peer Teaching	Peer Teaching	Peer Teaching		Peer Teaching	Peer Teaching	Peer Teaching	Peer Teaching	

	Monday	Tuesday	Wednesday	Thursday	Friday
8-9	Inquiry Group	FCM	Inquiry Group	Interactive Session	Inquiry Group
9-10					
10-12	Interactive Session	Structure: HP or GARLA session	Interactive Session	Structure: HP or GARLA session	Interactive Session
11-12					Research & Scholarship
12-1					
1-5					

***There will be exceptions, but you will be notified in advance.

2. Block Co-Leaders:

Karin Herrmann, Nicholas Ziats, Susanne Wish-Baratz

3. Design Team:

Karin Herrmann, Nicholas Ziats, Susanne Wish-Baratz, Anastasia Rowland Seymour, Lisa Navracruz, Robert Jones, Patti Quallich, Nivo Hanson, Michele Mumaw, Colleen Croniger

4. Block Goals:

Competency and Definition	Educational Program Objective (EPO)	Block Goals Block 7	Recommended Changes
Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care	Demonstrates ability to apply knowledge base to clinical and research questions Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician	Develop a three-dimensional understanding of the structure of the human body.	Fully implement boot camp and GARLA

<p>Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care</p>	<p>Demonstrates ability to apply knowledge base to clinical and research questions</p> <p>Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician</p>	<p>Apply this knowledge during their clinical clerkships and, ultimately, in the practice of medicine.</p>	<p>Fully implement boot camp and GARLA</p>
<p>Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care</p>	<p>Demonstrates ability to apply knowledge base to clinical and research questions</p> <p>Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician</p>	<p>Understand the role of various radiological imaging modalities in the diagnosis and treatment follow-up of diseases. Develop a foundation for interpretation of radiological images.</p>	<p>Fully implement GARLA</p>
<p>Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care</p>	<p>Demonstrates ability to apply knowledge base to clinical and research questions</p> <p>Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician</p>	<p>Be able to compare and contrast normal histology of organs and tissues to diseased organs and tissue.</p> <p>Be able to evaluate organ and tissue histology/histopathology using virtual microscopy.</p>	<p>Added new VM images and will continue additions, revise Lessons in Aperio system</p>

<p>Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care</p>	<p>Demonstrates ability to apply knowledge base to clinical and research questions</p> <p>Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician</p>	<p>Be able to compare and contrast normal physiology versus pathophysiology of organ systems.</p> <p>Understand a) the role of the kidney in maintaining homeostasis, b) the interaction of the kidneys with other organ systems, and c) the pathophysiology of the major categories of renal disease and the pharmacologic agents used to treat them.</p> <p>Understand a) normal cardiovascular physiology and cardiac cell function and b) how cardiovascular diseases and pharmacologic therapies alter normal cardiac physiology and function at both the organ and cellular levels.</p>	<p>Fully implement GARLA</p> <p>No change recommended</p>
<p>Knowledge for Practice Demonstrates knowledge of established and evolving biomedical, clinical, epidemiological and social-behavioral sciences as well as the application of this knowledge to patient care</p>	<p>Demonstrates ability to apply knowledge base to clinical and research questions</p> <p>Demonstrates appropriate level of clinical and basic science knowledge to be an effective starting resident physician</p>	<p>Integrate the anatomy, imaging anatomy, pathophysiology and pharmacologic treatment of the respiratory system with general homeostasis.</p>	<p>No change recommended</p>

Common to all Blocks:			
Teamwork & Interprofessional Collaboration Demonstrates knowledge and skills to promote effective teamwork and collaboration with health care professionals across a variety of settings	Performs effectively as a member of a team	Develop and practice the knowledge and skills that promote effective teamwork across a variety of settings.	No change recommended
Professionalism Demonstrates commitment to high standards of ethical, respectful, compassionate, reliable and responsible behaviors in all settings, and recognizes and addresses lapses in behavior	Commonly demonstrates compassion, respect, honesty and ethical practices Meets obligations in a reliable and timely manner Recognizes and addresses lapses in behavior	Understand and practice the behaviors of an ethical, respectful, compassionate, reliable, and responsible physician.	No change recommended
Interpersonal & Communication Skills Demonstrates effective listening, written and oral communication skills with patients, peers, faculty and other health care professionals in the classroom, research and patient care settings	Uses effective written and oral communication in clinical, research, and classroom settings Demonstrates effective communication with patients using a patient-centered approach Effectively communicates knowledge as	Understand and demonstrate effective communication skills for learning and clinical practice environments.	Fully implement GARLA

	well as uncertainties		
Research & Scholarship Demonstrates knowledge and skills required to interpret, critically evaluate, and conduct research	Analyses and effectively critiques a broad range of research papers Demonstrates ability to generate a research hypothesis and formulate questions to test the hypothesis Demonstrates ability to initiate, complete and explain his/her research	Analyze, critique and present research studies from the primary literature.	No change recommended

In the grid below, please list the specific course changes you made this year based on last year's report.

What changes were made 2018-2019?	How did the changes work?	How will you follow-up on these changes next year 2019-2020?
First GARLA in Steps to Success (Female Breast)	Well – learned a lot	Will be implemented in Block 2
Optional GARLA sessions Block 2 (Pulmonary) & Block 3 GI and FAST exam	Well – learned a lot Students need to know where to go without help from Curricular Affairs	Will implement in 2019 - 2020 in the HEC as mandatory GARLA sessions
Mandatory GARLA session Block 3 (Hepato-biliary system & pancreas & spleen), Block 4 (Kidney, urinary bladder, aorta, IVC) & Modified GARLA implemented for Male and	Well – learned a lot Students need to know where to go without help from Curricular Affairs. Timing: We are doing well with the content to time ratio. Students confirmed this in surveys.	Will implement in 2019 - 2020 in the HEC Pre and Post-session material: We hope to prepare and provide preparatory and review material to deepen

Female pelvis and perineum	<p>Equipment: We successfully tested the requirements of the GARLA equipment and faculty resources.</p> <p>Content: We have established curricular content for all of the pilot sessions that were implemented.</p> <p>Faculty: We have generated/built a pool of faculty and have designed an experience that enables them to feel comfortable with the new teaching format.</p>	the experience of the GARLA sessions and help students with the retention of content. This will be a goal for the 2020-2021 academic year.
HoloAnatomy almost complete	We are very proud of what we have created and look forward to making the software even better	Continue developing – currently developing joints; next we'll develop HoloNeuroanatomy
GARLA Accommodation plan created and presented to WR2	One student required accommodation in Block 4 He attended GARLA but did not use HoloLens. He dissected (used prosections) for Male and Female Pelvis and Perineum	Continue trying to accommodate to student needs. Many students have head/neck aches from the HoloLens. The university has purchased over 100 HoloLens 2. It is our hope that this device will be more comfortable and have a larger field of view than the HoloLens 1.
Histopathology, Block 2 Breast Pathology lectures with new faculty	Changes were fine, faculty received good evaluations	Will continue with same faculty
Histopathology, Block 4 Cardiovascular valve lecture changed faculty	Changes were fine, faculty received good evaluations	Uncertain
Histopathology, New VM images	Changes acceptable	Will continue to update

5. What changes do you anticipate making to the Block next year (AY 2019-2020)?

- Implement Bootcamp between Blocks 1 and 2
- Full implementation of GARLA 2019-2020
- Addition/deletion of faculty due to new hires or faculty leaving
- Addition of new VM images, deletion of outdated images

6. What successful, innovative components of your block are best practices that you would like to share with the other Blocks?

TBD

7. What specific changes (lectures, TBL, IQ cases, other) do you plan to make to the course next year?

Changes anticipated for next year	Reason for changes (evidence)
All anatomy/radiology lectures will be presented as recordings	Time constraints
Introduce eAnatomy and its use; ensure that access continues during the 2019-2020 academic year	Subscription set to expire in October.
Provide laptop access to the Radiologic-Anatomic Imaging Library (RAIL) for students with DICOM viewers on both PCs and Macs. DICOM viewers should be hosted on the server instead requiring individual students to download free licenses on their laptops.	Free DICOM viewer licenses for Macs have limited functionality Laptops of students may not fulfil technical requirements to successfully work with the imaging library.
Histopathology-none	

8. Please review your Block objectives. Have you added or deleted major concept areas to your Block?

Yes

- We have added physical diagnosis, interactive radiology with DICOM viewers and Ultrasound
- We have stopped dissecting female and male pelvis and perineum
- HP objectives had minor modifications

9. Did formative (GARQS) and summative assessment in the Block support achievement of block objectives?

Yes

10. What specific changes do you plan to make to the course next year?

Changes anticipated for next year	Reason for changes (evidence)
Block 1 No change	
Boot Camp	Formative Practical after week 1; summative practical after week 2
Blocks 2-6	GARQs converted to GARLAQs (Gross Anatomy, Radiology and Living Anatomy Questions); Practical exam will be on HoloLens and in Radiology Reading room. PD will be assessed during Block 6 Clinical Skills exam. Applied Ultrasound from GARLA will either be assessed during Block 6 Clinical Skills exam or will need to wait to be assessed until resources (such as US simulators) are available.
Histopathology	Minor changes with lecture/review with new faculty, revision of weekly quizzes and EOB exam
Histopathology	Additions of new virtual microscopy images to replace old/outdated images, need support and space on server

11. Describe how faculty teaching quality was reviewed for your block. What faculty development opportunity was offered in response to student feedback?

Faculty teaching quality was assessed via student feedback after GARLA sessions. A variety of didactic approaches were tried. Students appreciate small group teaching for Living Anatomy and with Radiology residents. They also like having access to teaching assistants, faculty and fourth year medical students during HoloAnatomy sessions. Residents, instructors and teaching assistants were trained prior to sessions during which they were involved.

Histopathology Faculty evaluations at mid and end of block also at feedback sessions

12. Response to PEAC Report

RECOMMENDATIONS

- We support better design and integration of diagnostic imaging into gross anatomy instruction
 - i. With GARLA Radiology has become an equal part of anatomy teaching and is completely integrated. Content of anatomy in HoloLens and LA is directly aligned with content in imaging.
 - ii. Instruction is intensified by the combination of personal instruction through Dr. Herrmann and the individual small group interactive instruction by the residents.
 - iii. Coordination of radiology to histopathology lectures
- Utilize the evolving “living anatomy” ultrasound thread to integrate anatomy teaching with physical diagnosis.
- Drs. Jones, Rowland-Seymour and Navracruz are members of the GARLA design team and are partnering with Drs. Herrmann and Wish-Baratz to create and implement the GARLA curriculum
- We recommend creating opportunities for fourth year students to teach anatomy (relative to their specialty choice) to first and second year students.
 - i. We were able to work with a fourth year medical student who matched in OB/GYN on the female P & P HoloAnatomy labs. She also taught during the GARLA session and volunteered to assist with review sessions. She did an excellent job
- Examine efforts in this area in the College Program and find ways to recognize teaching assistants and resident teachers
 - i. Dr. Herrmann has considered this for the radiology residents, otherwise we have yet to do this
 - ii. Similar for Pathology residents
- We urge careful planning and pilot testing the HoloLens instruction and consider identifying an alternate plan in the event that HoloLens technology is not ready for full implementation.
 - i. HoloLens has been piloted and appears to be ready for implementation in the 2019-2020 academic year
- We support inclusion of computers in gross anatomy labs (introduce one computer per dissection table so that dissection can be combined with computer learning bringing state-of-the-art into the anatomy labs). We support the procurement of computers in the anatomy labs even with the anticipated move to the new building, as the graduate gross anatomy course (ANAT 411) will continue to be taught in these labs. This course is essential for training MS in Applied Anatomy students (some of whom are medical students) and is also taken as an elective by medical students.
 - Computers were procured and installed between pairs of tables in the anatomy labs. They will be used for the PA course, graduate course and the anatomy boot camp.
- We encourage supplementation of histopathology and anatomy and more integration with the clinical curriculum including: clinical core rotations, IQ+, boot camps and AIs.

- Will need further support for addition of Histopathology Virtual Microscopy images and space on server to support images.

13. Acknowledgements:

We could not have realized this curriculum without the devotion of the GARLA design team including: Bob Jones, Anastasia Rowland-Seymour and Lisa Navracruz.

We thank Patti Quallich and Nivo Hanson for their assistance in Block 7.

We would like to thank all members of curricular affairs for their help with GARLA/HP for 2018-2019 and 2019-2020.

We are enormously grateful to Victor, David, Rob, Sue Shick and the IT/UTECH and IC teams for their invaluable efforts in the implementation of GARLA.

We also want to thank the team at the Sim Center for their support around ultrasound and supply.