

A Distance-learning Approach to POCUS Training (ADAPT) Template for Monthly Rotation

US Rotators	<ol style="list-style-type: none"> 1. Scroll down to the day to find links to the pre-work. Complete this prior to the teaching sessions. Set aside 1-2 hours to complete pre-work. 2. The link for you to join each day’s zoom chat is populated below. 3. You are automatically muted upon joining the chat. Please unmute yourself when speaking. You can also use the chat feature. 4. Consider putting on your video. Or at least change your background to a picture. 5. Bimonthly office hours for an orientation to the curriculum or any other questions/comments feedback you may have 6. Weekly QA session via zoom
US Faculty	<ol style="list-style-type: none"> 1. Scroll down and enter a time for your teaching session. 2. Avoid images with any patient identifiers. 3. Please encourage the learners to have their handheld devices with them during the learning sessions so they can interact with their probes while you’re teaching.

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1 Physics/eFAST	2 Renal	3 Echo	4 GB	5 Aorta/IVC	6
7	8 Lung	9 MSK/Soft Tissue	10 Echo Pathology	11 Ocular	12 DVT	13
14	15 Torsion/Doppler intro	16 Pelvic US	17 Peds Potpourri	18 Peds GI/Appy	19 Procedures	20
21	22 Nerve Blocks	23 ENT	24 Advanced Echo	25 GI - SBO	26 OB	27
28	29 Critical Care	30 Jeopardy / Review				

Date	Logistics (time in EST)	Pre-work links (1-2 hrs of work)	Learning Objectives / Guide for Faculty
6/1 Physics/ eFAST	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	Physics links: Article 1: https://www.acep.org/sonoguide/physics.html Video 1: https://www.youtube.com/watch?v=HcO3SHPgHbY eFAST links: Article 1: https://emcrit.org/emcrit/fast-exam/ Video 1: (navigate all the videos in the link above) Video 2: https://vimeo.com/34118863	<ul style="list-style-type: none"> ● US Physics ● Knobology ● How to perform eFAST exam ● Indications/Limitations of eFAST ● Identify potential false positive/negatives
6/2 Renal	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	Article 1: https://www.acep.org/sonoguide/renal.html Video 1: https://www.youtube.com/watch?v=L Ct18pXJreY Video 2: http://www.ultrasoundpodcast.com/2012/05/episode-27-renal-ultrasound/ Video 3: https://vimeo.com/69556457	<ul style="list-style-type: none"> ● Evaluate renal anatomy ● Troubleshoot image orientation/probe movement to obtain desired views ● Evaluate for bladder distention, hydronephrosis ● Measure a bladder volume
6/3 Echo	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	Article 1: https://www.acep.org/sonoguide/cardiac.html Article 2: https://onlinelibrary.wiley.com/doi/epdf/10.1111/acem.12652 Article 3: http://www.sonomojo.org/sono-pro-tip-distinguishing-right-from-left-heart/ Podcast 1: http://www.ultrasoundpodcast.com/2018/03/basiccardiac/ Video 1: https://litfl.com/vanpocus-cardiac-views/ Video 2: https://www.coreultrasound.com/how-to-obtain-cardiac-windows/ Video 3: https://www.coreultrasound.com/basic-cardiac-function/ Video 4: https://vimeo.com/44575412 *** http://pie.med.utoronto.ca/TTE/TTE_content/standardViews.html → Great site to perform and learn virtual cardiac ultrasound	<ul style="list-style-type: none"> ● Indications/limitations of an ED echocardiogram ● Identify the 4 views in a focused cardiac exam ● Troubleshoot probe positioning and how to obtain the desired views ● Basic clinical scenarios and how echo affects management ● Pathology (basics): RVD, ejection fraction, pericardial effusion, tamponade
6/4 GB	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	Article 1: (ppt to scroll through) http://www.ucdenver.edu/academics/colleges/medschool/departments/EmergencyMedicine/Sections/ultrasound/education/Documents/Chapter%2015%20RUO%20-%20Flipped.pdf Article 2: (flow chart) https://wikem.org/wiki/File:Biliary_Ultrasound.png Podcast 1: https://www.ultrasoundgel.org/posts/28WCAL-s9k-U9D1e0wygww Video 1:	<ul style="list-style-type: none"> ● Understand GB anatomy ● Troubleshoot performing the GB exam ● Evaluate for stones, sludge, wall thickening, pericholecystic fluid, and common bile duct dilatation ● Diagnostic criteria for acute cholecystitis ● Interesting cases

		<p>http://www.ultrasoundpodcast.com/2012/09/episode-35-gallbladder-ultrasound/ (skip to 9:15) Video 2: https://www.coreultrasound.com/gallbladder/ AEUS Biliary: https://vimeo.com/87759897</p>	
6/5 Aorta/IVC	<p>Faculty in charge: Email contact:</p> <p>Zoom link: Meeting ID:</p> <p>Meeting time:</p>	<p>Aorta links: Article 1: http://www.tamingthesru.com/blog/ultrasound-case-of-the-month/february-2019 Video 1: https://www.youtube.com/watch?v=uiTsFtanyzM Video 2: https://www.youtube.com/watch?v=WKnFD6KeO4c Video 3: https://www.youtube.com/watch?v=4ITq2gyW5Nw</p> <p>IVC links: Podcast 1: https://www.ultrasoundgel.org/posts/V1_nSRFBIm8RPZGeW4JbpQ Video 1: https://www.coreultrasound.com/ivc/</p>	<ul style="list-style-type: none"> ● Distinguish the aorta vs IVC ● Identify anatomic landmarks ● Identify the branches of the aorta ● Identify AAA ● Evaluate for aortic dissection and limitations of the exam ● Evaluate the IVC for collapsibility vs distensibility ● Identify potential false positive/negatives of IVC exam
6/8 Lung	<p>Faculty in charge: Email contact:</p> <p>Zoom link: Meeting ID:</p> <p>Meeting time:</p>	<p>Video 1: https://www.coreultrasound.com/5ms/ https://www.youtube.com/watch?v=VzgX9ihnmec Video 2: http://www.ultrasoundpodcast.com/2012/07/episode-31-lung-ultrasound-with-vicki-noble-part-1/ (skip to 7:30 min mark) Video 3: http://www.ultrasoundpodcast.com/2012/07/episode-32-lung-ultrasound-with-vicki-noble-part-2/</p> <p>Additional helpful links: http://pie.med.utoronto.ca/POCUS/POCUS_content/lungUS.html</p>	<ul style="list-style-type: none"> ● Indications/limitations of a thorax exam ● How to perform ● Evaluation for pneumothorax, pleural effusion, consolidation, pulmonary edema, viral PNA, etc.
6/9 MSK/soft tissue	<p>Faculty in charge: Email contact:</p> <p>Zoom link: Meeting ID:</p> <p>Meeting time:</p>	<p>MSK links: Article 1: https://www.acep.org/sonoguide/musculoskeletal.html Video 1: https://vimeo.com/41682960</p> <p>Soft tissue links: Article 1: https://www.acep.org/sonoguide/soft_tissue.html Article 2: https://www.acep.org/sonoguide/foreign_bodies.html Video 1: https://www.coreultrasound.com/cellulitis-vs-abscess/ Video 2: https://www.coreultrasound.com/nsti/</p>	<ul style="list-style-type: none"> ● Indications/limitations of the exam ● Normal sonographic findings in a soft tissue/msk exam ● Evaluate for joint effusions, fractures, tendon pathology, dislocation, abscess, cellulitis, foreign body, nec fasc ● How to perform foreign body removal, joint injections
6/10 Echo Pathology	<p>Faculty in charge: Email contact:</p>	<p>Article 1: https://www.ncbi.nlm.nih.gov/pubmed/27793505 Podcast 1: https://www.ultrasoundpodcast.com/2018/07/when-tamponade-is-tampona</p>	<ul style="list-style-type: none"> ● Review of normal 4 views of focused exam ● Endocarditis ● Right heart strain/TAPSE

	<p>Zoom link: Meeting ID: Meeting time:</p>	<p>de/ Video 1: https://www.coreultrasound.com/right-heart-function/ Video 2: https://www.coreultrasound.com/pericardial-tamponade/ WMA: Video 1: https://www.youtube.com/watch?v=-5a_jgQBFcM Video 2: https://www.youtube.com/watch?v=AYxqkPsUysE</p>	<ul style="list-style-type: none"> ● Regional WMA ● Tamponade
6/11 Ocular	<p>Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:</p>	<p>Article 1: https://www.acep.org/sonoguide/smparts_ocular.html Video 1: https://www.youtube.com/watch?v=gNLTZipajwM Video 2: https://www.youtube.com/watch?v=bf1BjBYGhV4 Video 3: https://www.coreultrasound.com/onsd/ Video 4: https://vimeo.com/41575053</p>	<ul style="list-style-type: none"> ● Indications for an ocular exam ● Tips and tricks in obtaining the views ● Evaluation for retinal detachment, vitreous detachment, vitreous hemorrhage, ONSD
6/12 DVT	<p>Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:</p>	<p>Article 1: https://www.acep.org/sonoguide/dvt.html Article 2: Adhikari Isolated DVT, Implications for 2 point compression https://www.annemergmed.com/article/S0196-0644(14)01419-X/fulltext Podcast 1: https://www.ultrasoundgel.org/posts/ZVHiVPnfPjUyIUgqIxNVA Video 1: https://www.youtube.com/watch?v=57vCNW6AVqU Video 2: https://vimeo.com/52819569</p>	<ul style="list-style-type: none"> ● How to use POCUS DVT exam clinically ● Normal anatomy ● Limitations ● Evaluation of DVTs
6/15 Torsion/ Doppler intro	<p>Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:</p>	<p>Ovarian links: Article 1: https://coreem.net/core/ovarian-torsion/ Video 1: https://www.youtube.com/watch?v=ebpcUIQVmlE&feature=youtu.be Video 2: https://www.youtube.com/watch?v=RcsJrlksFHg (skip to 5:21 min) Testicular links: Video 1: https://www.youtube.com/watch?v=IQ5pUWlu6mI Video 2: https://www.youtube.com/watch?v=tO1c5P26fQs. (You can skip 2:20-13:20 otherwise, watch all of it.)</p>	<ul style="list-style-type: none"> ● Introduction to doppler ultrasound ● Normal anatomy of ovaries/testicles ● Ovarian torsion ● Testicular torsion
6/16 Pelvic US	<p>Faculty in charge: Email contact: Zoom link: Meeting ID:</p>	<p>Article 1: NEJM Doubilet article https://escholarship.org/uc/item/3g86q83k Article 2: https://www.acep.org/sonoguide/obgyn.html Video 1 - Transab: https://vimeo.com/41808262 Video 2 - Transvag: https://vimeo.com/52830902</p>	<ul style="list-style-type: none"> ● Indications for transabdominal vs transvaginal ultrasound ● Normal sonographic findings in pelvic and 1st trimester ob ultrasound ● Significance of discriminatory zone, need for ultrasound even with low beta HCG

	Meeting time:		<ul style="list-style-type: none"> ● Identify gestational sac, yolk sac, fetal pole ● Measurements of CRL and FHR ● Non-obstetric GYN pathology
6/17 Peds Potpourri	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	<p>Techniques: Video 1: https://www.youtube.com/watch?v=XIc_HKgvN2o&t=7s Video 2: https://www.youtube.com/watch?v=fDhNo2f9ols&t=17s Video 3: https://www.youtube.com/watch?v=B1ygV3yJhIU</p> <p>Applications: 1) https://www.youtube.com/watch?v=1ifkK7ELXK4&t=301s 2) https://www.coreultrasound.com/uotw-89/ 3) https://blog.5minsono.com/csb-peds-cold/ 4) https://www.coreultrasound.com/uotw-28</p>	<ul style="list-style-type: none"> ● Ultrasound techniques in pediatric population and how adult applications apply to children ● Diagnostic management of a limping child ● Use of ultrasound in nonaccidental trauma ● Pediatric soft tissue evaluation ● FoCUS protocol ● Pediatric procedures
6/18 Peds GI / Appy	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	<p>Appendicitis: Article: https://www.annemergmed.com/article/S0196-0644(14)00296-0/fulltext Video 1: https://www.ultrasoundgel.org/posts/Ur9k1gk0AY97Q01fhsOGxg Video 2: https://vimeo.com/152378669 Video 3: https://vimeo.com/93051990</p> <p>Intussusception links Video 1 https://youtu.be/mlswUT5ZDC4 Article: 10.1016/j.jemermed.2019.06.007</p> <p>Pyloric Stenosis links Video1: https://youtu.be/kMXprvunX-g Video2: https://youtu.be/cVzU72tM_wI</p> <p>Article: https://doi.org/10.1111/acem.12163</p>	<ul style="list-style-type: none"> ● Normal appendix ● Appendicitis ● Landmarks and techniques for finding the appendix ● Intussusception ● Pyloric stenosis
6/19 Procedures	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	<p>Article 1: US Guided LP: https://www.acepnow.com/article/perform-ultrasound-assisted-lumbar-puncture/ Video 1: https://www.youtube.com/watch?v=rbbpwE_ijm0 Podcast 1: US Podcast Pericardiocentesis https://www.youtube.com/watch?v=M4vHEr25yFk Video 2: https://www.youtube.com/watch?v=9npNQM8ANds Video 3: https://vimeo.com/59095992 Video 4: NEJM US Guided Peripheral IVs: https://www.nejm.org/doi/full/10.1056/NEJMvcm1005951</p>	<ul style="list-style-type: none"> ● LP ● Pericardiocentesis ● Thoracentesis ● Paracentesis ● US Guided Central/Peripheral IVs
6/22 Nerve blocks	Faculty in charge: Email contact: Zoom link: Meeting ID:	<p>Article 1: https://www.acepnow.com/article/avoid-these-two-common-femoral-nerve-block-errors/ Nagdev Common Femoral Block Errors Video 1: http://5minsono.com/vids/ (scroll down to nerves) Video 2: http://www.ultrasoundpodcast.com/tag/nerve-blocks/</p>	<ul style="list-style-type: none"> ● Basic set up and concepts including LAST ● Upper extremity: radial, median, ulnar ● Lower extremity: femoral, posterior tibial ● More advanced: interscalene, supraclavicular, infraclavicular, fascia iliaca, sciatica

	Meeting time:	Femoral: https://www.youtube.com/watch?v=5ht_N8j2KL8 Ulnar/Median: https://www.youtube.com/watch?v=6NKkzs9FA5I Radial: https://www.youtube.com/watch?v=rd7KeoP8IHA	
6/23 ENT	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	PTA: Article: https://www.acep.org/sonoguide/smparts_ent.html Video 1 - MGH PTA: Telescopic Submandibular Technique: https://www.youtube.com/watch?v=FMBERcu6Ykg Video 2: https://www.youtube.com/watch?v=eYjUYx56kUs ETT: Video 1 - AEUS Endotracheal Intubation: https://vimeo.com/122483333 Video 2: https://www.coreultrasound.com/endotracheal-tube-confirmation/	<ul style="list-style-type: none"> ● Submandibular v intraoral approach to PTA evaluation ● Use of ultrasound in endotracheal intubation
6/24 Advanced Echo	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	Article 1 (quick): ACEP - Diastology at the Bedside https://www.acep.org/how-we-serve/sections/emergency-ultrasound/news/march-2020/fellows-section-diastology-at-the-bedside/ Article 2 (longer): HFpEF: the echocardiographic VALVE protocol for emergency physicians: https://www.ncbi.nlm.nih.gov/pubmed/24368405 Podcast/Video 1 (quick): https://www.coreultrasound.com/diastology/ Podcast/Video 2 & 3 (longer) https://www.ultrasoundpodcast.com/2018/11/diastology-part-1/ https://www.ultrasoundpodcast.com/2018/11/diastology-part-2/	<ul style="list-style-type: none"> ● Diastology ● LVOT VTI ● The use of TEE and its views
6/25 GI - SBO	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	Article 1: https://www.aliem.com/small-bowel-obstruction-diagnosis-ultrasonography/ Podcast 1: https://www.ultrasoundgel.org/posts/p2qdSlr2QTN4RCtwO5rvYQ Video 1: https://www.youtube.com/watch?v=MoZx-EV3Aso Video 2: https://www.coreultrasound.com/small-bowel-obstruction/ Video 3: https://vimeo.com/69551555	<ul style="list-style-type: none"> ● How to perform a GI evaluation ● Diagnostic criteria for SBO ● Examples
6/26 OB	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	Video 1: http://www.ultrasoundpodcast.com/2014/10/pregnancy-ultrasound-part-1-of-10amed-back-back-basics-cabo-update/ (can skip to 2:30) Video 2: http://www.ultrasoundpodcast.com/2014/11/endomyometrial-thickness-measurement-interstitial-ectopic-pregnancy-ultrasoundrel-foamed/ (can replace)	<ul style="list-style-type: none"> ● Overview about obstetric ultrasounds ● indications/limitations ● Concepts of ALARA ● What to look for in the 2nd and 3rd trimester: GA, FHT ● Review pelvic US / 1st trimester exam

		Video 3: http://www.ultrasoundpodcast.com/2014/10/1st-trimester-pregnancy-ultrasound-part-2-ectopic-topics-foamed/ (skip to 1:30)	
6/29 Critical Care	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	Article 1: https://www.resuscitationjournal.com/article/S0300-9572(17)30607-X/fulltext Article 2: https://rebelem.com/beyond-acls-pocus-in-cardiac-arrest/ Video 1: https://vimeo.com/216695713 AEUS RUSH	<ul style="list-style-type: none"> ● REASON trial ● RUSH exam ● Cardiac Arrest ● Volume responsiveness ● Carotid flow time
6/30 Review	Faculty in charge: Email contact: Zoom link: Meeting ID: Meeting time:	Jeopardy / Review. No pre-work	