

**2019-20 Ultrasound Fellowship Curriculum
Training Parameters and Metrics with Required and Elective Modules**

Fellowship Requirements

Fellow conferences will take place on Wednesdays from 3 (ish) pm-5pm involve the following:

1. Fellow will review the assigned reading assignment for the day- faculty will comment
2. Most weeks there will be an educational video to review prior to conference
3. During each conference QA of recent ultrasound images obtained by the fellow and in the Emergency Department will be reviewed and commented upon. Unknown cases from image archives will also be presented to the fellow for discussion.
4. There will be a recent journal article that will be assigned for reading each week.
5. Fellow must complete all required training modules as noted below before graduation
6. Fellows may choose elective major or minor training modules according to interest and as time permits
7. Fellow will complete 900 documented POC Ultrasound exams prior to graduation
8. Fellow will complete a research project with ultrasound as a focus of the project prior to graduation
9. Fellow will submit research project to national conference for presentation
10. Fellow will teach minimum of 4 hours per month averaged over the year (Students/residents/fellows/APP/Faculty)
11. Fellow will attend one lecture per month where the ultrasound faculty are teaching (in addition to fellowship conference)
12. Fellow will participate in the Ultrasound interest group
13. Fellow will have at minimum of 18 hours per month of dedicated scan time in a clinical setting (ED/ICU/Clinic/Ward)
14. Fellow will have the option of International Rotation. The rotation will be a minimum of a week and maximum of 6 weeks. Additionally, the fellow will have the option of international travel for ultrasound teaching, education, or practice not to exceed 3 weeks total.
15. Fellow will be prepared to take the ARDMS certification exam at the completion of all requirements. ARDMS certification exam is optional.
16. Fellow will join American Institute of Ultrasound In Medicine and attend national conference (minimum 12 hours CME lecture attendance). Fellow will join at least one interest group/committee.
17. Participation in all Center of Ultrasound Education meetings.
18. Administrative requirements are yet to be defined.

Required Module- Physics (For review prior to Physics course)

- 1) Module 1- Basic Physics (Sonography Principles and Instruments 9th edition)
 - a) Introduction- pages 1-10
 - b) Ultrasound pages 13-36

- c) Transducers- pages 42-67
 - d) Introduction to Clinician Based Ultrasound
 - e) Physics and Fundamentals I
 - f) Knobology
 - g) Review Questions chapter 1,2,3
- 2) Module 2- Basic Physics (Sonography Principles and Instruments 9th edition)
- a) Instruments- pages 73-125
 - b) Physics and Fundamentals II
 - c) Physics and Fundamentals III
 - d) Care and Maintenance of the US Machine
 - e) Uploading images to PACS and Qpath
 - f) Review Questions Chapter 4
- 3) Module 3- Basic Physics (Sonography Principles and Instruments 9th edition)
- a) Doppler Principles- pages 133-176
 - b) Physics and Fundamentals IV
 - c) Review Questions Chapter 5
- 4) Module 4- Basic Physics- (Sonography Principles and Instruments 9th edition)
- a) Artifacts- pages 176-210
 - b) Performance and Safety- pages 217-236

Required Module- Emergency and Critical Care

1. Module 1- Trauma – FAST EXAM (done)
 - a. Trauma: Chapter 5 pages 61-89 (Emergency Ultrasound, Ma, Mateer,)
 - b. FAST and Beyond video
 - c. Article: Think ultrasound When Evaluating for Pneumothorax (Sound Judgment Series) J Ultrasound Med 2012; 31:501–504
2. Module 2- Cardiac (done)
 - a. Chapter 6 Cardiac pages 93-157(Emergency Ultrasound, Ma, Mateer)
 - b. Cardiac Orientation
 - c. Bedside Cardiac Ultrasound
 - d. *TAPSE and PE mortality article***
3. Module 3- Abdominal Vasculature (done)
 - a. AAA and dissection Pages 225-242 (Emergency Ultrasound, Ma, Mateer)
 - b. Evaluation for Abdominal Aortic Aneurysm
 - c. Abdominal Vasculature

4. Module 4 – First Trimester pregnancy
 - a. Chapter 14 First trimester pregnancy 279-314(Emergency Ultrasound, Ma, Mateer)
 - b. ***First trimester pregnancy video***

5. Module 5- Critical Care and Undifferentiated Hypotension (done)
 - a. Chapter 8 Pages 191-220 (Emergency Ultrasound, Ma, Mateer)
 - b. Undifferentiated Hypotension
 - c. The RUSH Exam: Rapid Ultrasound in SHock in the Evaluation of the Critically Ill Perera et al, *Emerg Med Clin N Am* 28 (2010) 9–56^[1]_[SEP]

6. Module 6- Vascular Access (done)
 - a. Vascular Access Chapter 21 pages 631-643 (Emergency Ultrasound, Ma, Mateer)
 - b. Ultrasound Guided Procedures, Chapter 22 pages 645-705 (Emergency Ultrasound, Ma, Mateer)
 - c. US Guided Vascular Access
 - d. Modified Procedure for USGVA
 - e. US Guided Peripheral Venous Access

7. Module 7- Evaluation for Deep Venous Thrombosis (
 - a. Deep Venous Thrombosis Emergency Ultrasound Chapter 15 pages 373-390
 - b. Lower Extremity Vascular Ultrasound)

8. Module 8- Soft Tissue (
 - a. Soft Tissue Chapter 18: pages 528-564 (Emergency Ultrasound, Ma, Mateer)
 - b. Soft Tissue Ultrasound
 - c. Sonography First for Subcutaneous Abscess and Cellulitis (Sound Judgment Series) *J Ultrasound Med* 2012; 31:1509–1512)

9. Module 9 Ultrasound of the Eye (
 - a. Ocular Ultrasound Chapter: 19 pages 569- 586 (Emergency Ultrasound, Ma, Mateer)
 - b.. Ocular Ultrasound)

10. Module 10- Thoracic Ultrasound
 - a. Pulmonary Chapter 7 pages 170-186 (Emergency Ultrasound, Ma, Mateer)
 - b. Thoracic Ultrasound
 - c. Lung Ultrasound in the Evaluation of Pneumonia (Sound Judgment Series) *J Ultrasound Med* 2012; 31:823–826

Required Module- Abdominal Ultrasound

1. Module 1- Abdominal Ultrasound
 - a. Normal structures-Appearance and threshold values
 - i. AIUM- Abdominal ultrasound essentials (disc 3 of 4)
 - b. Abnormal Structures
 - i. AIUM Abdominal ultrasound essentials (disc 3 of 4)

2. Module 2- Abdominal Ultrasound (The Requisites- Ultrasound, 2nd edition)
 - a. Gall Bladder Chapter 2 (pages 32-49)
 - b. Bile ducts Chapter 4 (pages 89-101)
 - c. Biliary Ultrasound

3. Module 3- Abdominal Ultrasound (The Requisites- Ultrasound, 2nd edition)
 - a. Liver Chapter 3 (pages 51-86)
 - b. Liver Ultrasound
 - c. Fatty Liver, Hepatitis, & Cirrhosis

4. Module 4- Abdominal Ultrasound (The Requisites- Ultrasound, 2nd edition)
 - a. Kidneys Chapter 5 (pages 103-144)
 - b. Renal Ultrasound
 - c. Complicated Acute Pyelonephritis With Extrarenal Manifestations :
Diagnosis With Sonography (Sound Judgment Series)
 - i. Journal of Diagnostic Medical Sonography 2013 29: 40

5. Module 5- Abdominal Ultrasound (The Requisites- Ultrasound, 2nd edition)
 - a. Male Lower GU Chapter 6 (pages 146-177)
 - b. Testicular Sonography- Gulfcoast DVD
 - c. Scrotal calcification: ultrasound appearances, distribution and Aetiology L H Bushby, MBBS, FRCS, F N A C Miller, MBBS, MRCP, S Rosairo, MBBS, J L Clarke, MSc British Journal of Radiology 75 (2002),283-288 © 2002 [The British Institute of Radiology](#)

6. Module 6- Abdominal Ultrasound (The Requisites- Ultrasound, 2nd edition)
 - a. Pancreas Chapter 7 (pages 179-190)
 - b. Imaging of the Pancreas- Gulfcoast DVD

7. Module 7- Abdominal Ultrasound (The Requisites- Ultrasound, 2nd edition)
 - a. Spleen Chapter 8 (pages 192-202)
 - b. Sonography of the Spleen- pictorial essay
 - i. J Ultrasound Med 2011; 30:1281–1293

8. Module 8- Abdominal Ultrasound (The Requisites- Ultrasound, 2nd edition)
 - a. General Abdomen Chapter 9 (pages 204-227)
 - b. Ultrasound Evaluation of the Appendix- Gulfcoast DVD
 - c. Sonographic Evaluation of Acute Appendicitis
 - i. Journal of Diagnostic Medical Sonography 2012 28: 320
 - d. Ultrasound of abdominal hernias
 - a. Sonography of hernias AIUM video (30 minutes)

9. Module 9- Abdominal Ultrasound- Review
 - a. Abdominal Sonography Case Studies- Liver, gall bladder- Gulfcoast DVD

10. Module 10- Abdominal Ultrasound - Review
 - a. Abdominal Sonography Case Studies- Kidney, Pancreas and aorta- Gulfcoast DVD

Required Module – Echocardiography (Resource -123 Sonography)

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon

Module videos from- 123 Sonography- University of Vienna

1. Module 1 How to Image 1:56
 - a. Basics 9:48
 - b. Parasternal 17:32
 - c. Apical 30:54
 - d. Subcostal 13:28
 - e. Suprasternal 4:40
 - f. Normal M-Mode 9:18
 - g. Doppler 28:24
 - f. Summary 5:31

Reading- *Essential Echocardiography: A Practical Handbook* by Scott Solomon

Chapter 2- Introduction to Imaging; The Normal exam pages 19-35

Chapter 3 Protocol and Nomenclature in TTE pages 35-71

2. Module 2- Heart Chambers and Walls 1:46
 - a. LV 29:18
 - b. RV 17:33
 - c. LA 17:34
 - d. RA 9:44
 - e. LVH Basics 7:01
 - f. LVH Findings 21:37
 - g. Summary 3:43

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon

Chapter 4 Clinical Utility of Echocardiography pages 71-89

Chapter 5 Echocardiographic Assessment of Ventricular Systolic Function Pages 89-119

3. Module 3 Diastolic Dysfunction 46:00

- a. Physiology 12:47
- b. Importance 4:32
- c. Assessment 12:25
- d. Simple Approach 7:54
- d. Specific Situations 5:24
- f. Patterns 21:08
- g. Complications 12:25
- h. Summary 4:38

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon

Chapter 6 Echo Assessment of Diastolic Function pages 119-133

4. Module 4 Cardiomyopathies

- a. Dilated Cardiomyopathy 40:00
 - a. Basics 4:42
 - b. Features 19:36
 - c. Forms 12:26
 - d. Summary 3:09
- b. Hypertrophic Cardiomyopathy 43:00
 - a. Basics 6:11
 - .b Evaluation 24:35
 - c. Evaluation II 9:34
 - d. Summary 2:16
- c. Restrictive Cardiomyopathy 23:00
 - a. Basics 8:04
 - b. Forms 12:44
 - c. Summary 2:05

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon

Chapter 9 Cardiomyopathies pages 161-191

5. Module 5 Coronary Artery Disease 1:18:00

- a. Segmental Approach 16:09
- b. Wall Motion 23:22
- c. Patterns 21:08
- d. Complications 12:25
- e. Summary 4:38

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon
Chapter 7 Echo in Myocardial Infarction pages 133-149

6. Module 6 Right Heart Disease 1:19:00
 - a. Basics 17:29
 - b. Assessment I 17:46
 - c. Assessment II 11:53
 - d. Diseases 29:49
 - e. Overload 3:56

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon
Chapter 18 Pulmonary Embolism and Secondary Pulmonary Hypertension pages 333-347

7. Module 7 Pericardial Disease 1:02:00
 - a. Pericardial Disease 20:16
 - b. Tamponade 14:35
 - c. Constriction 15:31
 - d. Other diseases 8:26
 - e. Summary 3:56

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon
Chapter 10 Pericardial Disease pages 191-209

Required Module- Obstetrics and Gynecology

1. Module 1- Obstetrics- The Requisites- Ultrasound, 2nd edition
 - a. Guidelines to the Obstetrical Examination and Appropriate Measurements
Pages 291-311
 - b. Sonographic evaluation of the Yolk Sac- Pictorial essay J Ultrasound Med
2012; 31:87-95
2. Module 2- First trimester pregnancy
 - a. Emergency Ultrasound, Ma et al- pages 279-314
 - b. First Trimester Normal- AIUM DVD
3. Module 3- First Trimester Abnormal - The Requisites- Ultrasound, 2nd edition
 - a. First Trimester Pregnancy and Ectopic Pregnancy Chapter 14 Page 322-353
 - b. First Trimester Abnormal AIUM DVD
4. Module 4- Obstetrics- The Requisites- Ultrasound, 2nd edition
 - a. Placenta, umbilical cord, and cervix (Pages 469-493)
 - b. Multiple gestations (pages 496- 509)

5. Module 5- Gynecology
 - a. Pelvis and uterus Chapter 23 pages 527-563
 - b. Sonographic Evaluation for Acute Pelvic Pain (Sound Judgment Series)
 - i. J Ultrasound Med 2012; 31:1713–1718

6. Module 6- Gynecology
 - a. Adnexa Chapter 24 (pages 565-598)
 - b. Recognizing Gynecological Pathology- Gulfcoast DVD
 - c. Sonography of Post-menopausal bleeding (Sound Judgment Series)
 - i. J Ultrasound Med 2012; 31:333–336

Ultrasound Fellow Major Elective Modules

Pediatric Specialty Modules- Major Elective- Required for Joint PEM/Ultrasound Fellows

1. Module 1- Prenatal scan for abnormalities
 - a. Sonography of Perinatal Malformations of the Neonatal Abdomen
<http://www.aium.org/communities/viewLecture.aspx?id=37>

2. Module 2-Renal
 - a. Sonography in the evaluation of pediatric urinary tract infections
 - i. Ultrasound Clinics- Pediatric Ultrasound Part 2
 Volume 5, Number 1, January 2010
 - b. Posterior urethral valves
 - c. Congenital abnormalities- pancake and horseshoe kidney
 - d. Renal Cystic Disease
 - i. Ultrasound Clinics- Pediatric Ultrasound Part 2
 Volume 5, Number 1, January 2010
 - e. Tumors- Wilms

3. Module 3-Adrenal
 - a. Neuroblastoma
 - b. Adrenal hemorrhage and abscess

4. Module 4-Liver
 - a. Neonatal jaundice
 - b. Hepatic fibrosis
 - c. Choledochal cysts
 - d. Pediatric Liver Masses
 - i. Ultrasound Clinics- Pediatric Ultrasound Part 2
 Volume 5, Number 1, January 2010

5. Module 5-Pancreas
 - a. Cystic fibrosis

6. Module 6-Abdomen
 - a. Pyloric stenosis
 - b. Intussusception
 - i. Intussusception: A Sonographers Perspective, Journal of Diagnostic Medical Sonography, 2003, 19: 231
 - c. Malrotation
 - d. Body wall defects
 - e. Enteric duplications
 - f. Sonography of the Neonatal Abdomen
<http://www.aium.org/communities/viewLecture.aspx?id=38>
 - g. Ultrasound in the Evaluation of the Child With Acute Abdominal Pain
<http://www.aium.org/communities/viewLecture.aspx?id=71>
 - h. The Vomiting Neonate or Young Infant
Ultrasound Clinics- Pediatric Ultrasound Part 2
Volume 5, Number 1, January 2010
 - i. Sonography as the First Line of Evaluation of a Child with Suspected Acute Appendicitis (Sound Judgment Series) J Ultrasound Med 2012; 31:1153–1157

7. Module 7-Female
 - a. Precocious puberty
 - b. Menstrual dysfunction in adolescence
 - c. Ambiguous genitalia

8. Module 8-Male
 - a. Undescended testicles
 - b. Scrotal Ultrasound in Children AIUM Part 1 and Part 2
 - c. Scrotal Ultrasound
 - i. Ultrasound Clinics- Pediatric Ultrasound Part 2
Volume 5, Number 1, January 2010
 - d. CDUS for normal and torsed testicular appendages in children AJR:184, April 2005

9. Module 9-Head
 - a. Intracranial hemorrhage
 - b. Hydrocephalus
 - c. Cystic abnormalities of the brain and ventricles

10. Module 10-Neck
 - a. Thyroglossal duct cyst, brachial cleft cysts and cystic hydromas

- b. Interesting Cases in the Pediatric Neck
<http://www.aium.org/communities/viewLecture.aspx?id=42>

11. Module 11-Spine

- a. Meningocele and myelomeningocele
- b. Occult spinal dysraphism
 - i. Sacral pit, dermal sinus, lipoma, tight filum terminale etc
- c. Pediatric Spinal Canal: What's the Verdict?
<http://www.aium.org/communities/viewLecture.aspx?id=41>

12. Module 12-Musculoskeletal

- a. Congenital hip
- b. Septic hip verses synovitis
- c. Sonography of Pediatric Musculoskeletal Lesions
<http://www.aium.org/communities/viewLecture.aspx?id=40>
- d. Musculoskeletal Ultrasound: Transition From Adults to Pediatrics
<http://www.aium.org/communities/viewLecture.aspx?id=69>

13. Module 3-Heart

- a. Comprehensive Review of Major Congenital Heart Disease from a Multidisciplinary Perspective- AIUM curriculum
 - 1. Transposition of the great vessels
 - 2. Coarctation of the aorta
 - 3. AV septal defect
 - 4. Ventricular septal defect
 - 5. Tetralogy of Fallot
 - 6. Hypoplastic left heart syndrome

14. Module 14- Pediatric Masses

- a. Just Images: Pediatric Masses
<http://www.aium.org/communities/viewLecture.aspx?id=39>

Musculoskeletal Elective Module- Major Elective

1. Module 1 Shoulder

Shoulder

- 1. AIUM MSK Curriculum
Shoulder 1:12 1 hour and 12 minutes
- 2. Sonoworld <http://sonoworld.com/Client/Lectures/LecturePortal.aspx>
J. Antonio Bouffard, MD
Ultrasonography of the Shoulder

#116 Released On : Jul 20, 2009 | Time : 54 min

Part 1 Part 2 Part 3 Part 4 Part 5 Part 6

3. Reading

Fundamentals of Musculoskeletal Ultrasound, Jon A. Jacobson
Chapter 3 Shoulder

4. Reading Sound Judgment Series

Shoulder Sonography: Why We Do It, J Ultrasound Med 2012; 31:1325–

1331

2. Module 2 Elbow

Elbow

1. AIUM MSK Curriculum

Elbow 1:08 1 hour and 8 minutes

2. Sonoworld <http://sonoworld.com/Client/Lectures/LecturePortal.aspx>

J. Antonio Bouffard, MD

How To: Musculoskeletal Ultrasound of the Upper Extremity

#324 Released On : Dec 17, 2012 | Time : 32 min

Part 1

3. Reading

Fundamentals of Musculoskeletal Ultrasound, Jon A. Jacobson
Chapter 4 Elbow

3. Module 3 Hip and Thigh

Hip and Thigh

1. AIUM MSK Curriculum

Hip 1:59 1 hour and 59 minutes

2. Sonoworld <http://sonoworld.com/Client/Lectures/LecturePortal.aspx>

J. Antonio Bouffard, MD

Ultrasonography of the Adult Hip

#086 Released On : Feb 09, 2009 | Time : 54 min

Part 1 Part 2 Part 3 Part 4 Part 5

3. Reading

Fundamentals of Musculoskeletal Ultrasound, Jon A. Jacobson
Chapter 6 Hip and Thigh

4. Module 4 Knee

Knee

1. AIUM MSK Curriculum

Knee 52 minutes

2. Sonoworld <http://sonoworld.com/Client/Lectures/LecturePortal.aspx>

Amy Wilkinson, AMS

How To: Ultrasound of the Knee

#119 Released On : Aug 03, 2009 | Time : 15 min

Part 1

3. Reading

Fundamentals of Musculoskeletal Ultrasound, Jon A. Jacobson

Chapter 7 Knee

5. Module 5 Ankle, Foot and Lower Leg

Ankle, foot and Lower leg

1. Sonoworld <http://sonoworld.com/Client/Lectures/LecturePortal.aspx>
If You Do the Twist: MSK US of the Ankle
#309 Released On : Sep 24, 2012 | Time : 22 min
Part 1 Part 2
2. Sonoworld <http://sonoworld.com/Client/Lectures/LecturePortal.aspx>
Nandkumar Rawool, MD, RDMS
How To: Ankle and Foot Ultrasound
#203 Released On : Dec 20, 2010 | Time : 18 min
Part 1
3. Sonoworld <http://sonoworld.com/Client/Lectures/LecturePortal.aspx>
Nandkumar Rawool, MD, RDMS
Ankle and Foot Ultrasound
#204 Released On : Dec 20, 2010 | Time : 30 min
Part 1 Part 2 Part 3
4. Reading
Fundamentals of Musculoskeletal Ultrasound, Jon A. Jacobson
Chapter 8 Ankle, Foot and Lower Leg

6. Module 6 Wrist and Hand

Wrist and Hand

1. AIUM MSK Curriculum
Hand and Wrist 1:08 1 hour and 8 minutes
2. Sonoworld <http://sonoworld.com/Client/Lectures/LecturePortal.aspx>
Sandra J. Allison, MD
How To: Hand & Wrist
#250 Released On : Sep 24, 2011 | Time : 10 min
Part 1
3. Sonoworld <http://sonoworld.com/Client/Lectures/LecturePortal.aspx>
Hand & Wrist Sonography
#249 Released On : Sep 24, 2011 | Time : 25 min
Part 1 Part 2
4. Reading
Fundamentals of Musculoskeletal Ultrasound, Jon A. Jacobson
Chapter 5 Wrist and Hand
5. Reading- Sound Judgment Series
Comprehensive Musculoskeletal Sonographic Evaluation of the
Hand and Wrist, J Ultrasound Med 2013; 32:901–914

7. Module 7 Soft Tissue

Soft Tissue

1. Sonoworld <http://sonoworld.com/Client/Lectures/LecturePortal.aspx>

Cheryl L. Kirby, MD

Sonography of Soft Tissue

#352 Released On : Sep 09, 2013 | Time : 38 min

Part 1 Part 2 Part 3 Part 4

2. Sonoworld <http://sonoworld.com/Client/Lectures/LecturePortal.aspx>

Levon N. Nazarian, MD

Ultrasonography of Superficial Soft Tissue Masses

#118 Released On : Aug 03, 2009 | Time : 36 min

Part 1 Part 2 Part 3 Part 4

3. Reading, Sound Judgment Series

Musculoskeletal Sonography of the Tendon J Ultrasound Med 2012;

31:1879–1884

8. Module 8 Interventions

Interventions

1. Sonoworld <http://sonoworld.com/Client/Lectures/LecturePortal.aspx>

Levon N. Nazarian, MD

Ultrasound - Guided Musculoskeletal Interventions

#107 Released On : May 18, 2009 | Time : 45 min

Part 1 Part 2 Part 3 Part 4

General Elective/Selective Modules- Minor Electives

1. Module 1- Carotid stenosis

- a. Carotid Imaging ‘Do’s and Don’ts’- Gulfcoast DVD
- b. Carotid Stenosis Assessment- Gulfcoast DVD
- c. Carotid Case Studies- Interactive CD- Gulfcoast
- d. Multidiscipline approach to treating carotid disease

<http://www.aium.org/communities/viewLecture.aspx?id=11>

2. Module 2- Thyroid evaluation

- a. Requisites- Ultrasound, 2nd edition- (pages 244- 259)
- b. Thyroid Sonography- Gulfcoast DVD
- c. Thyroid Imaging

<http://www.aium.org/communities/viewLecture.aspx?id=26>

3. Module 3- Regional anesthesia

- a. Ultrasound Guided Regional Anesthesia of the Lower Extremities- Gulfcoast DVD (nerve blocks of upper and lower extremity)

4. Module 4- Liver- vasculature

- a. Evaluation of Portal Hypertension- Gulfcoast DVD
- b. Duplex/Color Evaluation of Liver Disease- Gulfcoast webinar
- c. Liver Doppler Evaluation

- <http://www.aium.org/communities/viewLecture.aspx?id=25>
- d. Hepatobiliary Imaging
<http://www.aium.org/communities/viewLecture.aspx?id=27>
- e. Sonography of Portal Vein Tumor Thrombus Associated With HCC
Sound Judgment Series,
Journal of Diagnostic Medical Sonography 2013 29: 44
5. Module 5- Breast
- Breast Sonography- SDMS on VHS
 - Breast ultrasound- AIUM web lecture
6. Module 6 – US of the lymph nodes
- US of lymph nodes – AIUM US of salivary glands and lymph nodes
 - US evaluation of lymph nodes
 - Sonographic Evaluation of Cervical Lymph Nodes
AJR 2005;184:1691–1699
7. Module 7- Dialysis grafts and fistulas
- Ultrasound Evaluation of Dialysis Access Grafts and Fistulas- Gulfcoast DVD
 - Hemodialysis vascular access
 - <http://www.aium.org/communities/viewLecture.aspx?id=57>
8. Module 8- Arm venous
- Arm Venous Examination- Phillips Medical Systems CD
 - Diagnosing and treating venous disease
<http://www.aium.org/communities/viewLecture.aspx?id=13>
9. Module 9- Evaluation for Deep Venous Thrombosis Extended
- Requisites, Chapter 11- Extremities- vessels pages 276-286
 - For Symptomatic patients: Why every DVT study should be Bilateral- AIUM
 - For DVT, Why unilateral exams are sufficient- AIUM DVD
 - DVT- Calf veins- to do or not to do- Yes AIUM DVD
 - DVT- Calf veins- to do or not to do- No AIUM DVD
 - Venous Case Studies- Gulfcoast DVD (2 hours- select cases as desired)
 - For review with faculty- selected cases
10. Module 10- Miscellaneous
- Ultrasound evaluation of temporal arteritis
 - Evaluation of sinusitis
 - Sialolithiasis : Sonographic Detection of Salivary Duct Stones (Sound Judgment Series) Journal of Diagnostic Medical Sonography 2013 29: 36

Tropical Ultrasound – Minor elective

1. Module 1 – Overview
 - (a) US and tropical diseases
 - (b) Machine Care and maintenance

2. Module 2 – Logistics and teaching
 - (c) Logistics of ultrasound in resource limited settings
 - (d) Portable machine review
 - (e) Teaching ultrasound in resource limited settings

3. Module 3 – Tropical echocardiography
 - (f) Tropical echo basics
 - (g) US for rheumatic heart disease

4. Module 4 – Liver and Liver Masses
 - (h) Focal Liver lesions in Infectious Disease
 - (i) Hepatitis and cirrhosis

5. Module 5 – Parasites of the liver and kidney
 - (j) Ultrasound evaluation of echinococcal cysts
 - (k) Evaluation of schistosomiasis by ultrasound
 - (l) Fasciola

6. Module 6 – Ultrasound in HIV and TB
 - (m)Ultrasound for HIV
 - (n) Ultrasound for pulmonary TB
 - (o) Ultrasound for extra pulmonary and abdominal TB

7. Module 7: Other parasitic diseases
 - (p) Amebiasis, trypanosomiasis, ascaris, filarial, trematode, (pages 93-130)
Manual of Diagnostic Ultrasound in Infectious Tropical Diseases
 - (q) Ultrasound for lymphatic filariasis

8. Module 8: OBGYN ultrasound in resource limited settings
 - (r) Infertility evaluation
 - (s) OB Ultrasound in Resource Limited Settings

Advanced Cardiothoracic – minor elective

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon

Module videos from- 123 Sonography- University of Vienna

1. Module 1 Aortic Disease 1:02:00 -123 Sonography

- a. Imaging 10:24
- b. Basics 17:28
- c. Dissection 9:00
- d. Findings 13:17
- e. Coarctation 8:43
- f. Summary 3:36

2. Module 2 Endocarditis 1:29:00 – 123 Sonography

- a. Basics 17:40
- b. Native valve 14:08
- c. Complications 17:02
- d. Right heart 6:26
- e. Prosthetic 9:58
- f. PM 9:52
- g. Non-bacterial 5:48
- h. Surgery 5:00
- i. Summary 3:42

3. Module 3 Aortic Stenosis 1:09 – 123 Sonography

- a. Basics 15:35
- b. Quantification 18:40
- c. Special circumstances 19:32
- d. Surgery 5:14
- e. Sub/supravavular 5:45
- f. Summary 4:37

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon

Chapter 11 echo Assessment of Aortic Stenosis Pages 209-223

4. Module 4 Aortic regurgitation 49:00 – 123 Sonography

- a. Basics 11:49
- b. Quantification 23:50
- c. Acute AR 4:19
- d. Surgery 7:36
- e. Summary 2:24

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon

Chapter 12 echo Assessment of Aortic Regurgitation Pages 223-239

5. Module 5 Mitral Stenosis 1:05 -123 Sonography
 - a. Basics 7:58
 - b. Features 19:09
 - c. Quantification 22:27
 - d. Valvuloplasty 12:31
 - e. Summary 2:57

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon
Chapter 13- Mitral Stenosis pages 239-255

6. Module 6 Mitral Regurgitation 1:41 – 123 Sonography
 - a. Principles 9:25
 - b. Mitral Valve Prolapse 10:24
 - c. Flail 9:45
 - d. Other Causes 6:16
 - e. Quantification 23:14
 - f. Mechanisms 31:38
 - g. Surgery 7:21
 - h. Summary 3:10

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon
Chapter 14- Mitral Regurgitation pages 255-285

7. Module 7 Tricuspid valve disease 49:00 – 123 Sonography
 - a. Basics 11:01
 - b. TR Causes 14:05
 - c. TR Quantifications 14:32
 - d. TS 6:48
 - e. Summary 3:07
8. Module 8 Tumors and Masses 1:04 – 123 Sonography
 - a. Don't Belong There 28:11
 - b. Belong there 19:28
 - c. Aren't here 8:22
 - d. Summary 8:21

Reading- Essential Echocardiography: A Practical Handbook by Scott Solomon
Chapter 19 Cardiac Masses and Tumors pages 347-363

9. Module 9 Advanced thoracic ultrasound

- a. Part I
- b. Part II
- c. Part III
- d. Part IV
- e. Copetti, Copetti, Reissig. Clinical Integrated Ultrasound of the Thorax Including Causes of Shock in Nontraumatic Critically Ill Patients. A practical approach. Ultrasound in Med. & Biol., Vol. 38, No. 3, pp. 349–359, 2012

10. Module 10 Congenital Heart Disease Evaluation - 123 Sonography

Shunt lesions general

ASD 1

ASD 2

ASD imaging

When to suspect ASD

ASD Closure

Conclusion of ASD

VSD Introduction

Types of VSD

Hemodynamics of VSD

Imaging of VSD

VSD Closure

Conclusion of VSD

PDA Introduction

Imaging of PDA

PDA Closure

Conclusion of PDA

Demo- introduction and PLAX

Demo- SAX

Demo- types of ASD

Demo- the ventricles

Demo- ASD from the apical view

Demo- the AV-valves

Demo- measuring the sPAP

Demo- Qp:Qs

Demo- conclusion