



Sonography Principles & Instrumentation Registry Review October 21, 2020

Presented by: Bryan Dodd, M.Ed, RDMS, RVT, RT(R)

Wednesday, October 21, 2020	
7:15	Welcome and Continental Breakfast
7:30	Essentials of Diagnostic Ultrasound
8:30	Physical Principles
9:00	Break
9:15	Pulse Echo Instrumentation, Storage and Display Propagation of Ultrasound Through Tissue
10:15	Break
10:30	Transducers
11:15	Image Controls
12:00	Lunch
1:00	Doppler Instrumentation and Hemodynamics
2:15	Break
2:30	Imaging Artifacts
3:15	Quality Assurance and Safety
4:00	Break
4:15	Mock Exam & Interactive Review of Results
5:00	Adjourn



Sonography Principles & Instrumentation Registry Review October 21, 2020

The Gulfcoast Ultrasound Institute is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The Gulfcoast Ultrasound Institute designates this live educational activity for a maximum of 7.5 *AMA PRA Category 1 Credit™*. Physicians should claim only the credit commensurate with the extent of their participation in the educational activity.

This course also meets CME / CEU requirements for ARDMS. Note: While offering the CME credit hours noted above, activities are not intended to provide extensive training or certification for exam performance or interpretation.

NEEDS STATEMENT:

The planning committee has determined a need for the following educational activity based on request from the medical community, expanded utilization of ultrasound, and lab accreditation requirements and scope of practice requirements for sonographers and technologists.

COURSE OBJECTIVES:

At the completion of the program the participant should be able to:

1. Increase the participants' knowledge to better perform diagnostic ultrasound examinations.
2. State the elementary principles of ultrasound including definition of ultrasound, basic properties and units of measure.
3. Describe the fundamental principles of sound and the propagation of sound in soft-tissue.
4. Cite the different types of transducers, focusing, sound beam formation and the various types of resolution including: axial, lateral, contrast and temporal
5. Recognize components and terminology of ultrasound equipment and instrumentation.
6. List the advantages of Doppler, Color Flow and Color Power Imaging.
7. Differentiate imaging artifacts by their cause and characteristic appearance.
8. Apply statistical test correlation and test validation using CHI Square principles regarding sensitivity, specificity and overall test accuracy.
9. Outline safety, quality control, quality assurance and bioeffects concerns regarding operation and maintenance of ultrasound equipment.
10. Identify areas of weakness that require additional self-study to successfully pass the ultrasound board examination offered by ARDMS, CCI or ARRT.

While offering CME credits this activity is not intended to provide extensive training or certification for performing or interpreting ultrasound examinations. We recommend working under supervised conditions until an accepted level of proficiency has been achieved.

No financial commercial support or educational grants were received for this activity and no "in-kind" commercial support is provided as no "hands-on" instruction is performed.



Sonography Principles & Instrumentation Registry Review October 21, 2020

Disclosure of Relevant Financial Relationships With Commercial Companies/Organizations

Gulfcoast Ultrasound Institute, Inc. endorses the standards and essentials of the Accreditation Council for Continuing Medical Education for activities and the speakers at these activities disclose relevant relationships with commercial companies.

Speakers having relevant relationships include receiving from a commercial company research grants, consultancies, honoraria and travel, or having a self-managed equity interest in a company.

FACULTY:

Bryan Dodd, M.Ed, RDMS, RVT, RT(R)
Ultrasound Consultant
Phoenix, AZ
No relevant financial relationships to disclose

All presentations for this CME activity were reviewed and approved by member(s) of the GUI staff to determine content validity and ensure that no conflicts of interest exist prior to final course material compilation and printing.



Sonography Principles & Instrumentation Registry Review October 21, 2020

Disclosure of Individuals in Control of Content

In addition to the faculty listed on the previous page the following individuals are recognized by GUI as being in control of content of this program:

James Mateer, MD, RDMS (Medical Director-planner & QI Task Force)

Medical Director, Gulfcoast Ultrasound Institute
Milwaukee, WI

No relevant financial relationships to disclose

Charlotte Derr, MD, RDMS, FACEP (Co-Medical Director-planner & QI Task Force)

Assistant Professor of Emergency Medicine &
Fellowship Director of Emergency Medicine
Ultrasound Fellowship Program
University of South Florida Medical School
Tampa, FL

No relevant financial relationships to disclose

Andreas Dewitz, MD, RDMS (Member of Advisory Board & QI Task Force Subcommittee)

Associate Professor of Emergency Medicine
Vice Chair of Ultrasound Education
Boston Medical Center
Boston, MA

No relevant financial relationships to disclose

Lori Green, BA, RT, RDMS, RDCS, RVT (Program Director-planner, Content Reviewer, QI Task Force)

Gulfcoast Ultrasound Institute, Inc.
St. Petersburg, FL

No relevant financial relationships to disclose

Trisha Reo, AAS, RDMS, RVT (Program Coordinator-planner, Content Reviewer, QI Task Force)

Gulfcoast Ultrasound Institute, Inc.
St. Petersburg, FL

No relevant financial relationships to disclose

Content:

All content for this CME activity were reviewed and approved by member(s) of the GUI staff to determine content validity and ensure that no conflicts of interest exist prior to final course material compilation and printing.

Reviewed & approved:

Lori Green BA, RT, RDMS, RDCS, RVT

Trisha Reo AAS, RDMS, RVT

HANDS-ON INSTRUCTORS:

No hands-on instruction is performed for this course.



Sonography Principles & Instrumentation Registry Review

October 21, 2020

Welcome!!

The entire staff at Gulfcoast Ultrasound Institute would like to welcome you to our educational facility.

Our goal is to provide the highest quality continuing education possible in a relaxed and personal atmosphere. The content of each program has been carefully planned to provide you with the information needed to obtain a firm foundation to begin gaining the experience to perform and/or interpret ultrasound examinations in the specialty of your choice. The program will be structured with lectures in the morning and hands-on sessions during the afternoon to allow more individualized attention the program participants will be divided into groups for the hands-on workshops based on your experience level and type of equipment you work with.

To help you get the most out of this program we would like to make the following recommendations:

1. Attend the lectures and scheduled hands-on sessions.
2. When you are not involved in a scheduled afternoon session, take advantage of the SUPPLEMENTAL SCANNING WORKSHOP or check out a video tape from our library to watch on one of the review stations located in the break room.
3. If you do not understand a particular concept ASK FOR HELP!
4. Study your course workbook during the evening.
5. Remember excellence is not achieved overnight. Becoming proficient in any ultrasound specialty requires the commitment to continually study, and perform multiple (at least 100) exams before an initial level of confidence is achieved. The AIUM guidelines suggest competency for interpretation requires a minimum of 500 exams per specialty.
6. Begin scanning immediately upon return to the ultrasound departments even if it's on a volunteer. We recommend scanning/interpretations under supervised conditions until an accepted level of proficiency has been obtained.

All of our instructors, guest speakers and office staff are here to serve you! If you have any questions of any kind, please do not hesitate to ask.



Sonography Principles & Instrumentation Registry Review October 21, 2020

Gulfcoast Ultrasound Institute **EQUIPMENT RECOMMENDATIONS**

Throughout the past 35 years Gulfcoast Ultrasound Institute has taken great pride in our ability to provide quality continuing education programs while remaining unbiased regarding the recommendation of ultrasound equipment.

Our programs are supported by most of the major equipment manufactures by providing their systems for use during the hands-on sessions. These companies have learned their products will be used and demonstrated to the best of our abilities in an educational setting and that no selling or promotion is done on our premises.

We realize that some of the course participants may currently be in the process of evaluating equipment for purchase and would like the opinions of our staff to determine the "best" system for your department. Everyone has a "favorite" ultrasound system (usually because it is the one they have worked with the most and are comfortable with) however, Gulfcoast Ultrasound must take an unbiased position in regards to equipment recommendations.

If you are currently evaluating equipment for purchase we suggest you invite the equipment manufacturers to your facility for a private demonstration to determine image quality, ease of use, over-all capabilities etc. on an individual basis.

Thank you!

Lori Green BA, RT, RDMS, RDCS, RVT

Lori Green, BA, RT, RDMS, RDCS, RVT
Program Director