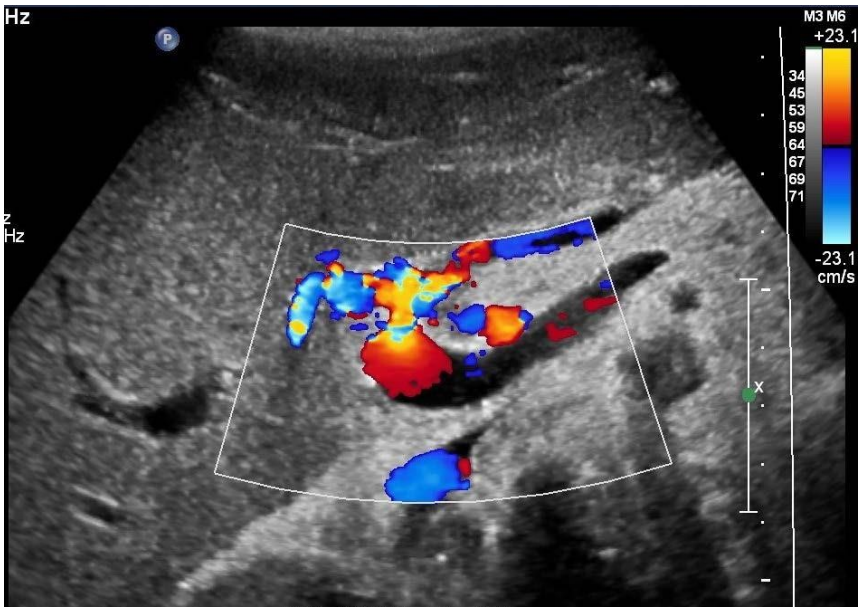
VANDERBILT UNIVERSITY

MEDICAL CENTER

Center for Programs in Allied Health

Diagnostic Medical Sonography Program



Program Handbook
2019-2020

Updated: September 13, 2019

INTRODUCTION TO PROGRAM HANDBOOK

The purpose of the Program Handbook is to serve as a reference and resource for the students in each of the programs in the VUMC Center for Programs in Allied Health (CPiAH). The Program Handbook is one of the important documents that provide operational guidance to students, to assist them in their successful progression through their programs. Other key documents with policy and procedure information important to students include:

- Catalog of the VUMC Center for Programs in Allied Health – Source of important policies and other information related to VUMC, the CPiAH and each program. The catalog is available on the VUMC CPiAH website.
- Program Handbook – Each CPiAH program provides students its own Program Handbook. The policies and procedures in the Program Handbook are aligned with VUMC, CPiAH and program policies that appear in the Catalog, as well as other locations. The purpose of the Program Handbook is to provide more specific details about each program, with a particular focus on operational information and procedures.
- VUMC CPiAH website and Program Website – The Center for Programs in Allied Health has its own website, and that website houses a website for each program within the CPiAH. Students will find important information regarding both the institution and the programs on these sites.

IMPORTANT NOTICE TO STUDENTS:

All students enrolled in VUMC Center for Programs in Allied Health (CPiAH) programs are bound by all VUMC, CPiAH and Program policies. By enrolling in a CPiAH program, every student acknowledges his or her responsibility to abide by and adhere to all institutional and programmatic policies and procedures. Students therefore have the responsibility of being familiar with the policies and procedures described in the Program Handbook, in the Catalog of the Center for Programs in Allied Health, and on the CPIAH and respective program's websites.

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IMPORTANT PROGRAM INFORMATION PROVIDED IN THE CPIAH CATALOG

The Catalog of the Center for Programs in Allied Health (CPiAH) contains important information about Vanderbilt University Medical Center, the Center for Programs in Allied Health and this program specifically.

Students are advised to refer to the CPiAH Catalog in order to obtain the following information about this program:

- Program Description
- Certification/Credentialing Information
- Mission, Credo and Goals
- Accreditation and Approvals
- Staff and Faculty
- Program Advisory Committee
- Admission Information
- Academic Program
- Didactic Education Plan
- Course List & Descriptions
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- Professional Code of Ethics
- Career Advising & Employment Placement

VANDERBILT UNIVERSITY
MEDICAL CENTER

Center for Programs in Allied Health
Diagnostic Medical Sonography Program

WELCOME

VUMC's Diagnostic Medical Sonography Program (DMS) welcomes you to your educational journey in sonography. Your 18 months at this facility will be packed with information, resources, and experiences that will prepare you for entry into a career in sonography. The Faculty and Staff are committed to providing you with the tools to build your own foundation. While the curriculum is designed to provide necessary information, it is your responsibility to exercise and utilize the many resources for maximizing your learning potential. As a team, we will strive to work together in order to meet your educational goals and the program's objectives.

The DMS Program Handbook is designed to guide you through your daily functions as a DMS student. Any questions you have related to the DMS Program Handbook should be directed to the Program Director. Your cooperation and compliance with these policies and procedures is expected and appreciated.

We look forward to having you in the program and are pleased you selected VUMC for your education.

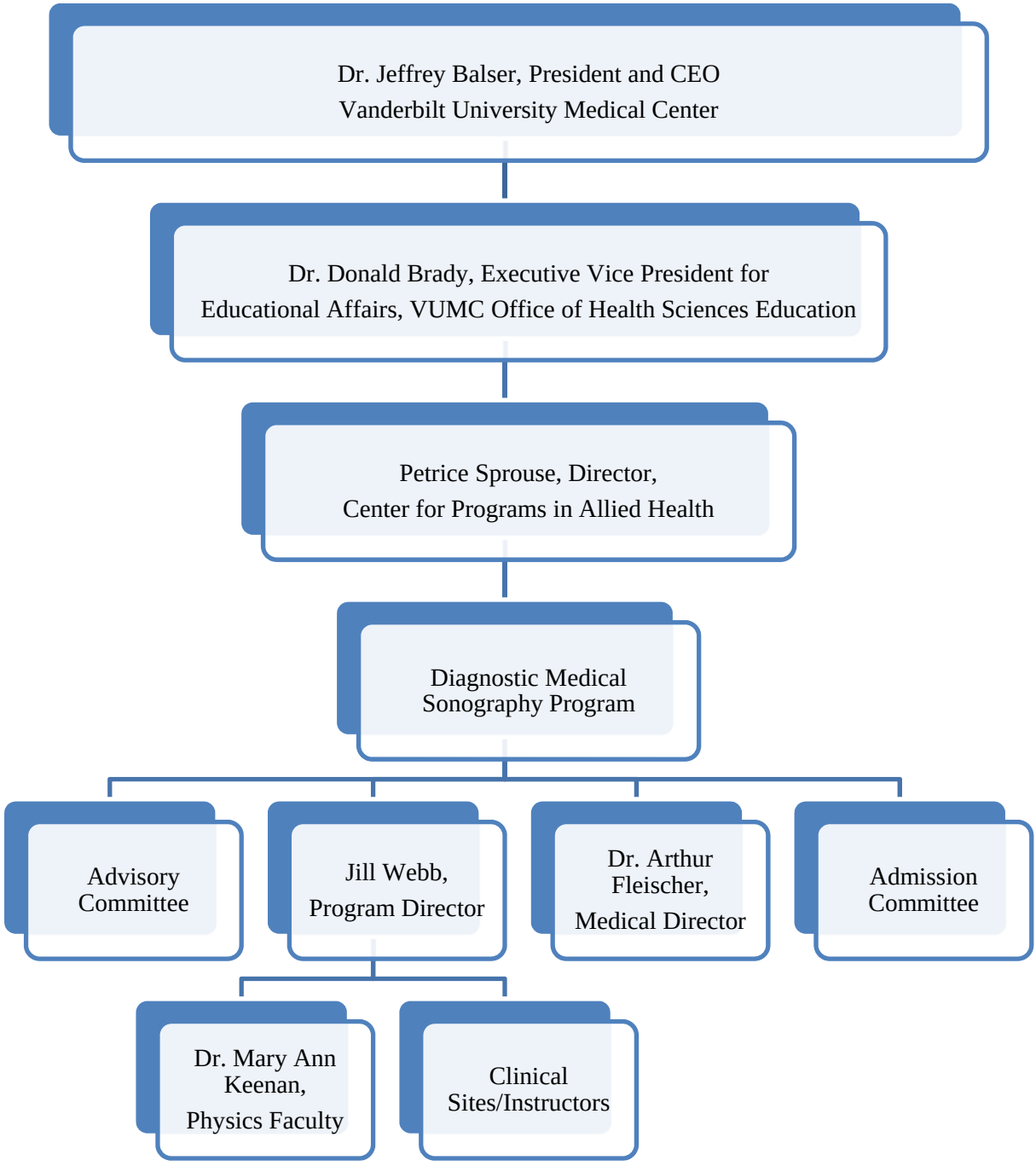
Comprehensive information pertaining to the Vanderbilt University Medical Center (VUMC) may be found at the following location:

https://vanderbilthealth.com/patientandvisitorinfo/48538

ACADEMIC CALENDAR
CLASS OF 2019-2021

FIRST ROTATION (12 WEEKS)	
September 23, 2019 – December 20, 2019	
Program Orientation	September 23-27, 2019
Thanksgiving Break	November 25-29, 2019
Christmas Break	December 23, 2019 – January 3, 2020
SECOND ROTATION (12 WEEKS)	
January 6, 2020 - March 27, 2020	
THIRD ROTATION (12 WEEKS)	
March 30, 2020 – June 19, 2020	
Memorial Day	May 25, 2020
SUMMER BREAK	
June 22-26, 2020	
FOURTH ROTATION (12 WEEKS)	
June 29, 2020 - September 18, 2020	
Independence Day	July 4, 2020
Labor Day	September 7, 2020
FIFTH ROTATION (12 WEEKS)	
September 21, 2020 – December 18, 2020	
Thanksgiving Break	November 23-27, 2020
Christmas Break	December 21, 2020 – January 1, 2021
SIXTH ROTATION (12 WEEKS)	
January 4, 2021 - March 26, 2021	

DMS PROGRAM ORGANIZATIONAL CHART



DMS PROGRAM ADVISORY COMMITTEE – STUDENT PARTICIPATION

The DMS Program Advisory Committee consists of educators and professionals in the field who provide oversight for the VUMC DMS Program. The Advisory Committee meets two (2) times per year.

Each cohort of students selects a classmate as the Student Representative to the DMS Program Advisory Committee. This representative will be required to prepare for and participate in the scheduled meetings. The representative will be responsible for seeking issues from the cohort and communicating these with the Program Director prior to the meeting for inclusion on the agenda. (Note: This is not the appropriate venue for hearing of individual grievances. Such grievances should be filed according to the VUMC CPiAH Grievance Policy.) Student representatives are provided with meeting documents to review prior to the scheduled meetings; these documents are considered confidential and are not to be shared directly with other students or individuals outside of the program. Student representatives are encouraged to actively participate in Advisory Committee meetings in order to best represent their student colleagues. Following the committee meetings, the student representatives are to consult with the Program Director on appropriate information to share with their student colleagues.

PROGRAM COMMUNICATION POLICY

The Program Director is the primary program contact for the students. Each student is asked to direct all program-related communication and questions to the Program Director. Most information will be disseminated to students via VUMC email. Students are expected to check this email at least once per day, but more frequently is preferred. Program meetings may be called on occasion by the Program Director for the dissemination of information to the students. Students will be given adequate notification of such meetings and are expected to attend. In the event of an unavoidable absence during one of these meetings, the student is responsible for contacting the Program Director in order to receive the information presented.

CLINICAL EDUCATION SITES

The following sites are utilized for primary clinical assignments (for purposes of technical competency and challenge completion):

- VUH- Vanderbilt University Hospital, Ultrasound Section in the Department of Radiology
  1st Floor, VUH 1145
- TVC- The Vanderbilt Clinic, Ultrasound Section in the Outpatient Radiology Department
  1st Floor, TVC 1630
- CWI- Center for Women's Imaging at Vanderbilt
  Crystal Terrace, Suite 650
  One Hundred Oaks, Suite 25300
- VCH- Vanderbilt Children's Hospital, Ultrasound Section in the Department of Radiology
  1st Floor, 1003

The following sites are utilized in a limited manner for specialty assignments:

- VVL- Vanderbilt Vascular Lab in the Vanderbilt Heart and Vascular Institute
  MCE, 5th floor (5209)
- VBC- Vanderbilt Breast Center at One Hundred Oaks
  Suite 25000
- MFM- Center for Women's Health at One Hundred Oaks

Suite 27100
- Pedi Echo- Pediatric Cardiology Imaging at Vanderbilt Children's Hospital
  Doctors' Office Tower, 5th Floor

CURRICULUM INTEGRATION

The curriculum for the VUMC DMS Program integrates the didactic and clinical education plans. Students are provided classroom and laboratory instruction prior to the assignment of clinical requirements for the same material. Details outlining this integration are provided in a document titled *Curriculum Threads* which is located in this Handbook under Appendix A.

PROGRAM TECHNOLOGY REQUIREMENTS

The DMS Program is a blended curriculum, in that some courses, assessments, and assignments are delivered using one or all components of an online Learning Management System (LMS). VUMC utilizes *Spark Learn* as the platform to deliver information/content for completion. Assessments take place on campus in the classroom using the LMS which will require each student to possess or have access to a laptop which can be brought to class for these sessions. Orientation to all LMS components is provided prior to required online activities.

The following programs are utilized for the stated purpose(s):
- Spark Learn https://spark-learn.app.vumc.org/login/index.php
  - Distribute course documents (syllabi, handouts, assignments, grading rubrics, etc.)
  - Discussion boards
  - Assessments (exams/quizzes)
  - Gradebook
- VUMC Box https://vumc.account.box.com/login
  - Sharing of documents which require collaboration
  - Submission of assignments for grading, if too large for submission on Spark Learn
- Trajecsys https://www.trajecsys.com/programs/login.aspx
  - Clinical Attendance Reporting (NOTE: Computers will be available in the clinical setting for this purpose.)
- RedCap- links will be provided to specific surveys
  - Program Evaluations and Surveys
  - Clinical Evaluations for student performance

Additional technology requirements are provided in the CPiAH Catalog. Please refer to the Catalog for additional information.

REQUIRED TEXTBOOKS

Diagnostic Medical Sonography Program students are not required to purchase the following textbooks.

Title	Author	ISBN/Publisher	Year	Retail Price*
Craig's Essentials of Sonography and Patient Care, Fourth Edition	M. Robert DeJong	978-0323416344/Elsevier	2017	$83.95
Textbook of Diagnostic Sonography, 8th Edition	S. Hagen-Ansert	978-0-323-35375-5/ Elsevier	2017	$374.00
Gould's Pathophysiology for the Health Professions, 6th Edition	R. Hubert	978-0323414425/ Elsevier	2017	$114.00
Sonography Principles and Instruments, 9th Edition	F. Kremkau	978-0-3233-2271-3/ Elsevier	2015	$117.00
Understanding Ultrasound Physics, 4th Edition	S. Edelman	978-0-9626444-5-0/ESP, Inc.	2012	$119.00
A& L Review for the Ultrasonography Examination, 4th Edition	C. Odwin & A. Fleischer	978-0-07-163424-3/ McGraw Hill	2012	$98.00

*As of September 1, 2019

PROFESSIONAL DEVELOPMENT POLICY

Students are expected to take ownership and responsibility for their own professional education through self-directed learning. The program provides adequate resources to meet all curriculum objectives. However, students must strive to expand the boundaries of the curriculum by seeking additional resources to enhance knowledge. While most assignments will require the use of resources outside of ones provided by the program, students are also required to submit documentation for personal professional development. This practice is paralleled to obtaining continuing medical education required to maintain professional certification.

Each student is required to submit documentation of two (2) hours of professional development activities per Rotation, for a total of twelve hours (12) prior to program completion. Professional development hours must be directly related to sonography, and may be obtained by, for example, attending a conference approved for CME, completion of self-directed learning activities, or successfully passing a certification exam upon eligibility.

Approved Continuing Medical Education (CME) activities for sonographers are excellent means to enhance and expand students' knowledge. Completion of CME activities requires discipline and demonstrates a commitment to professionalism and a future career. Any activity acceptable to the American Registry of Diagnostic Medical Sonography (ARDMS) is acceptable for this program requirement. ARDMS provides a key resource to approved CME sponsors at: https://www.ardms.org/maintain-certification/cme/cme-providers/

Students will be invited to and notified of conferences on campus when they are available. These conferences may be scheduled outside of the assigned class or clinical hours. Hours attended at these non-program-sponsored conferences do not apply toward hours required by the Attendance Policy. However, if CME credit is awarded for attending an on-or-off-campus conference, those may be used toward satisfying the program's professional development requirement. Regardless of whether or not the conferences are held on the VUMC campus, it is the student's responsibility to secure a certificate of attendance and provide a copy for his/her educational record. CME certificates are often provided by a link in an email within a couple of weeks after the conference. Obtaining and properly submitting such documentation is another important career practice related to professional development.

Although many CME sponsors charge a fee to receive official credit, completion of the activity can be achieved and documented prior to the 'purchase' of the official credit. Any documentation identifying: 1) completion of the activity, 2) title of the activity, and 3) activity provider may be submitted to satisfy the professional development requirement. Students are advised to be mindful of the amount of hours awarded, as each activity may be different (i.e., 0.50, 1.0, etc.).

Students in the DMS Program are eligible to apply for and take certification exams prior to graduation. For each certification exam passed, three (3) CME will be recorded in the student's educational record. This requires submission of a copy of the certification results document for each exam. Students will reach eligibility for the following exams at the designated time frame:

- *Sonography Principles and Instrumentation (SPI):* upon completion of all Physics coursework (mid-term of Rotation III- mid May of first year)
- *Abdomen Sonography (Ab specialty exam):* application within the last 60 days of the Academic Calendar
- *Obstetrics/Gynecology Sonography (Ob/Gyn specialty exam):* application within the last 60 days of the Academic Calendar

STUDENT HEALTH POLICY

Standards outlined in the program admission section of the CPiAH Catalog related to Physical Activity Standards, Intellectual and Emotional Standards, and Immunizations and Health Records apply to students throughout their enrollment in the program. Please refer to the Catalog for additional information.

ATTENDANCE POLICY

Required didactic and clinical clock hours will not exceed more than 40 hours per week. Student participation in the classroom and clinical settings are vital to the learning process. Student attendance will be recorded for official program records and maintained in each student's record. Attendance is recorded daily, monitored regularly, and calculated monthly. Calculation of attendance hours is in increments of one-tenth (1/10) of an hour, and the student MUST be present for the full increment of time to receive credit.

It is understood unforeseen and unavoidable absences can, and will, occur. ***Any absence <u>does not</u> reduce the satisfactory progress requirements for any didactic, lab, or clinical course (refer to the Make-Up Policy).***

Attendance requirements are as follows:

- A minimum of 95% of all didactic and lab clock hours
- A minimum of 98% of all clinical clock hours

Any absences exceeding these amounts will prompt disciplinary action and creation of an action plan to bring the student's hours of attendance back to a satisfactory level. *Any failure of the student to comply with the action plan will result in dismissal.*

Course Grading and Attendance

Course grading may be reduced by absences, per each course syllabus. Punctuality is equally as important as attendance and may affect course grades, per each course syllabus. A late arrival of $\geq$6 minutes will be recorded as an episode of tardiness. Excessive tardiness will warrant discussion between the Program Director and the student and may result in an adverse effect on students' grades or other aspects of satisfactory academic progress.

Program Factors and Attendance

Each year the curriculum plan designates the amount of time dedicated to all components of the sonography program. Students are advised that schedule changes may occur due to:

- Inclement weather (determined by the Program Director and the Director of Programs in Allied Health)
- Holidays outside of designated breaks (Memorial Day, July 4th, and Labor Day)

The Program takes full responsibility for ensuring that any change in schedule does not reduce total clock hours, and does NOT restrict curriculum content in any manner. For this reason, students are advised that clock hours missed for the above reasons may require additional sessions to be scheduled. Students will be notified of any class adjustments due to the reasons above.

Extended Absence

An extended absence is defined as three (3) or more consecutive school days. The student is required to notify the Program Director as soon as possible regarding the need for extended absence. The student must provide the appropriate written documentation to the Program Director to clearly support the necessity for any extended absence. If the absence is due to an illness, documentation must include a written release to return to work/school by the care provider. While extended absences are sometimes unforeseen and unavoidable, repeated extended absences will be reviewed with the student and the Program Director and may result in student withdrawal or disciplinary action. *Any extended absence that remains undocumented after a period of one week is in violation of program policies and will be referred for review under the program's disciplinary action policy.*

Any absence of more than three (3) days without notification to the Program Director may result in the student being considered withdrawn from the Program. Please refer to Student Withdrawal Policy for more information.

Travel and Commute Policy

It is the responsibility of each student to maintain personal transportation to and from all class and clinical assignments. As stated in the Attendance Policy, students are required to arrive punctually to all assignments. Students who 1) choose to live outside Metro Nashville or 2) are assigned to a clinical affiliate outside the Nashville Metro area are responsible for travel expenses and time. Travel time must be

completed prior to the starting clinical time. (Please refer to the Attendance Policy for more information about tardiness and early departures from clinical assignments.)

Weather Policy

There may be days in which severe weather makes conditions dangerous for travel. In the event that weather conditions are severe enough that the benefit of student attendance to class/clinical does not outweigh the risk, classes and/or clinical experiences may be cancelled by CPiAH. Any cancelled sessions will be rescheduled for make-up

Each student is encouraged to use his/her own judgment regarding personal travel during inclement weather to ensure safe travel. If program activities have not been cancelled but a student is unable to travel safely to campus due to inclement weather, will require make-up.

Attendance Recording Procedures

Didactic/Lab

Students are required to document attendance daily according to the specified process. The specific process will be discussed at the beginning of each Rotation. It is required for the student to inform the course instructor of any absence prior to the scheduled class/lab time. Failure to notify the instructor appropriately may result in disciplinary action. Preferred contact information will be provided in each course syllabus. The make-up of any coursework will be determined by each instructor and can be found within the syllabus. *It is the student's responsibility to follow-up with the instructor for any missed work and arrange for the make-up.*

Clinical

Students are required to be in the assigned clinical setting as scheduled. Each student is to follow these procedures for clinical attendance issues:

1. Recording Attendance: Students will record attendance through a web-based attendance system, Trajecsys. Orientation for using this system will be provided. All clinical center assignments will be documented using this method from a clinical center computer system. Calculation of hours in attendance is measured against the assigned shift. (*Example: If the shift is 8a-430p, the student MUST be clocked in by 0800 and out no earlier than 1630.)*
2. Punctuality: Students are expected to have documented clinical attendance for the entire duration of the assigned shift. Clocking in <u>any time</u> after the assigned start time will reduce the amount of attendance in increments of one-tenth (1/10) of an hour when calculated. If a student clocks in $\geq$6 minutes late, an episode of tardiness is recorded. The accumulation of three (3) episodes of tardiness within the same rotation will result in a reduction of the clinical course grade, as described in the course syllabus. If a student receives two reductions in course grade within the same rotation, written advisement will be carried out according to the Disciplinary Action Policy and additional clinical time may be assigned. If a student anticipates being more than 30 minutes late arriving to a clinical assignment, the student is required to notify the Clinical Site contact. The appropriate contact information will be provided for all Clinical Sites.
3. Early Departure: If a student must leave a clinical site early for any reason, both the Program Director and the student's supervising sonographer must be notified as soon as the student is aware of the need to leave. Calculation of hours in attendance is measured against the assigned shift. (*Example: If the shift is 8a-430p, the student MUST be clocked in by 0800 and out no earlier than 1630.)*

4. Meal Break: Clinical assignments greater than four (4) hours in duration OR that begin before and end after 12 noon include a 30 minute meal break. The supervising sonographer will

indicate the appropriate time for this break. (Students are advised that group meals will not always be possible.)

The Academic Calendar provides adequate breaks for students. It is strongly recommended to plan personal trips or other extended absences to align with the breaks provided in the Academic Calendar, in order to reduce absences. In cases of excessive absences, the student may be required to spend additional time to complete program requirements. No student will be allowed to complete such make-up coursework after nine (9) months beyond the end of the program completion date established at the time of enrollment.

Make-Up Policy (Clinical/Lab/Didactic Coursework)

Program Responsibilities
The Program is responsible for ensuring opportunities for student learning are made available according to the stated curriculum clock hours. The Program is responsible for the delivery of all content necessary to prepare graduates to become credentialed entry-level sonographers at the completion of the curriculum. However, unavoidable and unforeseen circumstances may occur to disrupt the scheduled clock hours (holidays and inclement weather, respectively). The course instructor will determine if additional class sessions need to be scheduled in order to maintain the appropriate delivery of all curriculum content. Students are advised that any rescheduled sessions MAY occur outside of the routine schedule.

Student Responsibilities
Students are required to attend program activities and complete assignments. The Attendance Policy outlines the procedure for calculating attendance and the minimum required amount of attendance. If a student falls below the minimum required attendance hours for didactic, lab, or clinical courses, additional assignments will be required related to the course content OR additional clinical hours will be scheduled. Make-up hours will be calculated and rounded up in increments of ½ hour, regardless of the amount of time missed. For example, a student who is deficient for one hour and fifteen (15) minutes of attendance will be required to make-up 1.5 hours of attendance. All make-up hours will be scheduled at the convenience of the instructor, the clinical education center, and around other students' clinical needs. If a student requires additional clinical attendance, a mutually agreed upon schedule will be created between the student, the Program Director, and the clinical site. Students are not permitted to make-up any clinical attendance without the prior approval of the Program Director.

The Program Director will advise any student who is identified as needing additional hours.

Making Up Didactic /Lab Coursework
Faculty presentations and other assigned coursework are vital components in the learning process. In the event of absence during a scheduled didactic/lab course, the student should refer to the course syllabus for make-up options for work missed specific to that course. It is at the instructor's discretion of how missed coursework will be made up. Each student is responsible for follow-up with the instructor within 24 hours of return to school for arrangement to make-up any missed work.

Make-up Exams: In the rare instance of an absence occurring on an exam day, the student is responsible for scheduling a make-up exam, according to the course syllabus and in collaboration with the course director/instructor. Students will not be permitted to use scheduled class, lab, or clinical times for purposes of making up exams. The exam will be scheduled on the student's personal time and at the convenience of the course director/instructor.

Making Up Clinical Assignments
The program objectives are competency-based, and while absences and episodes of tardiness will affect

the student's overall course grade, the total number of assigned competencies and challenges remain the same, regardless of the number of absences. The Program Director will work with the student to identify and schedule any clinical make-up hours needed to complete the competency requirements or clock hours minimum. These activities will be scheduled appropriately as not to adversely affect the clinical education center workload or any other student's clinical needs.

The student will be provided a schedule and clinical instructor information. The student should ensure that he or she clearly understands the assignment details prior to the commencement of the make-up date. In some instances, clinical assignments may need to be changed by the Program Director. In those cases, student will be provided adequate prior notice of the change and appropriate details about the new assignment. All make-up clinical assignments must be made by the Program Director, and under NO circumstances are students allowed to make arrangements for a clinical assignment to change a clinical assignment. Any student discovered participating in an unauthorized change will be subject to disciplinary action, including the disregard of hours completed on unauthorized clinical assignments. (Please refer to the Disciplinary Action Policy in this Handbook for more information on that policy.)

Under NO circumstances will a student be permitted to complete the program requirements in more than an additional nine (9) months beyond the student's original anticipated completion date (150% of the program's length).

LEAVE OF ABSENCE POLICY

A student may request a leave of absence from school for any reason (personal, medical, pregnancy/maternity, etc.), but all leave requests are subject to the approval of the Program Director. The student must submit a written request to the Program Director, outlining the nature of the requested leave and providing the starting and ending dates. For medical leave of absence, proper documentation of the medical condition is required as part of the review of the leave request, and medical clearance may be required in order for the student to return to program activities.

Prior to leave, a plan for re-entry into the curriculum and meeting requirements for graduation will be developed and signed by the Program Director and the student, and retained as part of the student's record. Depending on the length of the leave, the student may be required to repeat clinical or didactic experiences to ensure competence has been established. Depending on the length of time of the leave the student may have a different program completion date than his/her classmates.

In the event a student is unable to return from leave within the prescribed period and was in good academic standing when he or she went on leave, the program may ask the student to withdraw and may elect to offer the student a position in the next cohort. The student will be required to repeat ALL clinical assignments/competencies. However, credit for previously completed didactic coursework may be awarded at the discretion of the Program Director.

Under NO circumstances will a student be permitted to complete the program requirements in more than an additional nine (9) months beyond the student's original anticipated completion date (150% of the program's length).

Compassionate Leave

Three (3) school days of compassionate leave may be provided with proper documentation of the death of an immediate family member, including:

- Spouse
- Child, grandchild, or other dependent
- Parent or Parent-In-Law

- Grandparent
- Sibling

The Program Director will work with the student to determine a feasible plan to make up content missed while on Compassionate Leave.

CLINICAL SUPERVISION POLICY

Clinical supervision is a collaborative responsibility between the clinical site and the student. Supervision needs may change as each student demonstrates competency in certain areas of study. While some clinical sites may require direct supervision of students at all times, others may not. The following parameters are the minimum level of supervision required by the Program:

Direct Supervision

Direct supervision is defined as having a sonographer in the room monitoring all student activities and scanning techniques. Direct supervision is required in the clinical setting for students who have not met the following criteria: 70% of technical competencies assigned **AND** successful completion of the relative competency challenge

Direct supervision is required in the clinical setting for students in any of the following situations:

- Portable exam
- Intraoperative exam
- Invasive or Sensitive Exams/Procedure (this includes transvaginal, breast and scrotum exams)

Indirect Supervision

Indirect supervision is defined as having a sonographer available to the student in the department while performing an exam. Indirect supervision may be utilized once a student has demonstrated minimum competency by the successful completion of the relative competency challenge. During all clinical assignments, a staff sonographer MUST always scan behind the student to ensure adequate diagnosis for the patient and interpreting physician.

Clinical Preceptor Survey Policy

Students are required to request a clinical preceptor survey weekly. At the end of each week's clinical assignments, the student must identify the preceptor he/she performed the most exams with throughout the week. Prior to the start of each Rotation, students will be provided a template request with the link to an appropriate survey for each designated Rotation. It is the student's responsibility to email the survey request to the identified preceptor and copy the Program Director on the message. Failure to adhere to this process will be considered a deficiency in professionalism and therefore will adversely impact the clinical course grade.

The clinical preceptor survey will assess the student's affective, cognitive, and psychomotor skills in a progressive manner. These electronic surveys are monitored regularly and reviewed by the Program Director together with the student at least once during each Rotation. Any deficiencies identified will be reviewed with the student on a more frequent basis in order to permit behavior modification. Failure to improve survey scores will result in adverse actions, according to the policies outlined in this handbook.

CLINCAL EDUCATION PLAN

The Clinical Education Plan outlined below is divided into two (2) sections of required clinical performance evaluations:

1. Technical Competencies are defined as unique skill sets which must be performed in repetition with appropriately credentialed clinical staff (preceptors). Variable levels of assistance are permitted, but must meet the minimum requirements identified in the Technical Evaluation Criteria table. The Technical Competency list provides a pathway for progressive skill development from basic patient care and portions of abdominal, gynecological, and obstetrical exams to complete exams and advanced imaging skills.
2. Technical Competency Challenges are defined as graded evaluations for satisfactory performance of entry level skills defined in the Technical Competencies. Technical Competency Challenges may only be completed with designated, appropriately credentialed clinical staff (Clinical Instructors). Minimal levels of assistance are permitted and are identified in the Technical Evaluation Criteria table. Technical Competency Challenges MUST be requested in advance of the patient's arrival to the exam room and only after 70% of assigned Technical Competencies are satisfactorily completed. Entry level skills and competency are determined in the last Rotation of clinical coursework through the Final Competency Assessment with designated, appropriately credentialed Clinical Instructors.

The number of repetitions for each assigned competency that needs to be correctly performed is listed in parenthesis below. The student will assume responsibility for determining readiness and will arrange with the clinical preceptor to evaluate her/his technical performance.

Specific deadline dates for completing the required number of correct technical competencies are specified in each clinical syllabi.

	Technical Competencies	Number of Repetitions
Clinical I	**Basic Competency**	
	Basic Patient Care	**(10)**
Clinical II and III	**Segmental Imaging**	
	Aorta/IVC	**(10)**
	Liver	**(10)**
	Gallbladder	**(10)**
	Pancreas	**(10)**
	Renals	**(10)**
	Spleen	**(10)**
	Pelvis-UT	**(10)**
	Pelvis-OV	**(10)**
Clinical III and IV	**Segmental Imaging**	
	Fetal head	**(10)**
	Fetal extremities/spine	**(10)**
	Fetal abdomen	**(10)**
	Placenta, Cord, and Amniotic Fluid	**(10)**
	Fetal heart	**(10)**

Clinical IV, V and VI **Complete Ab/Gyn**

Complete Abdomen **(25)**

- Minimum of 3 technically difficult exams required
- Minimum of 5 patients with some form of pathology identified

RUQ (or additional complete abdomens) **(10)**

Pelvis w/Transvaginal **(20)**

- Minimum of 2 post-menopausal exams required
- Minimum of 5 patients with some form of pathology identified

Clinical V and VI **Complete Ob and Superficial Imaging**

1st Trimester OB **(10)**

Fetal Size/Growth and Detailed Anatomy **(10)**

Fetal Anatomy **(10)**

Survey and Fetal Size/Growth **(15)**

- Minimum of 3 exams >28weeks gestation required

Thyroid **(10)**

- Minimum of 2 patients must have some form of pathology identified

Scrotum **(10)**

- Minimum of 2 patients must have some form of pathology identified

Breast **(5)**

- Minimum of 2 patients must have some form of pathology identified

Clinical VI **Advanced Imaging**

Biophysical Profile **(5)**

Multiple Gestation OB **(2)**

Abdominal Doppler **(3)**

U/S Guided Procedures **(2)**

- Minimum of 1 procedure must be a thoracentesis

Vascular Imaging Progressions (Active Observation, Direct Assistance, and Direct Supervision)

Carotid **(3)**

Lower Extremity Venous **(3)**

Upper Extremity Venous **(3)**

In addition to achieving the required technical competencies listed previously, the student is required to pass Technical Competency Challenges during each clinical practicum in order to document progressive entry level skill development and complete satisfactory clinical requirements. Once the student has achieved a minimum of 70% of the required total number of repetitions for each technical competency, he/she may request to perform a competency challenge for the specified competency.

If the student is not successful during the challenge, he/she must complete additional repetitions of one or more competencies, and consult with the program director, before repeating the challenge. Two unsuccessful attempts to challenge a technical competency will result in academic probation and the implementation of a written plan of action required for the student to return to satisfactory academic status.

Technical Competency Challenges are required and will affect Clinical course grades if not completed by the date specified in each clinical syllabi. The required Technical Competency Challenges are:

Clinical I **Basic Competency**
One (1) Basic Patient Care competency

Clinical II **Segmental Imaging**
Any two (2) segmental abdominal and/or gynecological competencies

Clinical III **Segmental Imaging**
Any five (5) remaining segmental abdominal/gynecological competencies
Any one (1) segmental obstetrical competency

Clinical IV **Segmental and Complete Exam Imaging**
The remaining one (1) segmental abdominal/gynecological competency
The remaining four (4) segmental obstetrical competencies

Clinical V **Complete Exam Imaging**
Any one (1) complete:
Abdomen
Pelvis with Transvaginal
Obstetric (combined Fetal Anatomy with Survey and Fetal Size/Growtth

Clinical VI **Complete Exam Imaging**
Final Competency Assessment (entry level proficiency in abdominal, gynecological, and obstetrical exam techniques)
One (1) Thyroid competency
(may be completed after study in Clinical IV)
One (1) Scrotum competency
(may be completed after study in Clinical IV)

NOTE: Each technical competency and technical competency challenge is a separate exam requirement. A successful technical competency challenge does not substitute for any of the assigned technical competencies.

Clinical Technical Competencies and Technical Competency Challenges

Students are required to complete all assigned technical competencies and technical competency challenges in order to receive a Certificate in Diagnostic Medical Sonography from VUMC.

Technical competencies are obtained through observation by appropriately credentialed clinical staff (preceptors). While it is most ideal for a student to indicate the desired scanning competency to be observed prior to an exam, this may not always be possible. Once an exam has begun, an appropriate learning opportunity may present for an additional or different technical competency to be completed with the preceptor. Every opportunity to scan and learn should be maximized between the student and the preceptor. Immediately following any scanning time, the student is responsible for communicating with the preceptor to obtain: 1) feedback on techniques and 2) appropriate signature(s) indicating successful achievement of one or more technical competencies on the designated competency log.

The student may request a challenge evaluation when a minimum of 70% of the assigned technical competencies are completed and the student feels prepared to demonstrate his/her technical skill in that area. The assigned technical competency challenges are identified in the master Clinical Education Plan, as well

as the syllabus for each clinical rotation. Technical Competency Challenges may be completed with designated and appropriately credentialed Clinical Instructors (a list is provided with Clinical Orientation). ***While students may request challenges at any time, it is not advisable to wait until the last week of the Rotation to do so. There may be no appropriate patients scheduled, patients may not show for appointments or designated clinical instructors may be with other students or unavailable at the time requested.***

Once a student feels prepared to be evaluated for an assigned competency challenge, the following procedure **MUST** be followed or the challenge will be terminated or voided.

1. Notify the Clinical Instructor (CI) of the challenge request, identifying the type of challenge being requested AND the scheduled time for the selected patient. The CI will indicate availability or provide direction on what to do next.
2. Complete the following forms and have documents ready upon patient arrival*:
    a. Challenge evaluation form—evaluation page found in the clinical challenge manual with the top section completed to officially request the challenge
    b. Competency log demonstrating complete documentation of 70% of assigned competencies

*ALL of these forms MUST be completed and provided for the evaluator to review PRIOR to beginning the exam. If any document is not prepared or complete, the challenge will be terminated.

The Clinical Instructor reserves the right to terminate a challenge evaluation at any time for any reason.

Technical Competency and Challenge Evaluation Criteria

The student is required to demonstrate skill progress through repetitions of required technical competencies. The student's performance will be evaluated on the basis of correct performance of the technique in a progressively independent manner. After completing 70% of the required competencies, the student will assume responsibility for determining readiness and will arrange with a designated Clinical Instructor to evaluate his/her technical performance through a Competency Challenge*. Deadlines for completing the required number of competencies and challenges are listed in the clinical syllabi and outlined in the Clinical Education Plan.

To receive a "**Y**" (Yes) on a technical competency the student must receive a **minimum competency score of 3** for the degree of assistance needed on each technical competency. To receive a "**Pass**" on a competency challenge, the student must receive a **minimum score of 80** on each of the critical behaviors within the competency.* Below is the key for scoring critical behaviors.

Competency Score	Level of Assistance	Criteria	Level of Performance	Challenge Score
1	None	Independently performs optimal techniques; performs appropriate imaging per protocol with no errors in the demonstration of anatomy or pathology; displays professional interaction with the patient, patient's family and the health care team	Superior	100

2	Minimal	Performs optimal techniques with assistance only in technically difficult situations; performs appropriate imaging per protocol with no critical errors** in the demonstration of anatomy and pathology; displays professional interaction with the patient, patient's family and the health care team	Above Average	90
3	Occasional	Performs adequate imaging techniques but needs to continue improvement of image optimization techniques; performs appropriate imaging per protocol with no critical errors** in the demonstration of anatomy and pathology; displays appropriate interaction with the patient, patient's family and the health care team	Minimal	80
4	Significant	Needs assistance to perform basic imaging technique; demonstrates a poor knowledge of imaging protocol and has difficulty recognizing normal anatomical structures and pathology; displays poor judgment in the interaction with the patient, patient's family and/or the healthcare team	Below Average	70
5	Heavy	Performance of basic imaging technique is grossly inaccurate; does not demonstrate any knowledge of imaging protocol and is unable to recognize normal anatomy or pathology; displays inappropriate interaction with the patient, patient's family and/or the healthcare team	Poor	60

*The Clinical Instructor has the authority to deem the selected exam too difficult for the stage in the student's education or beyond entry level expectations.
**Critical errors include, but are not limited to,: 1) omission of findings previously identified in imaging studies; 2) findings easily visible within imaging techniques but not recognized or demonstrated by the student (i.e.; $\geq$ 1cm in size); 3) failure to correlate clinical/imaging to current exam.

PREGNANCY AND SAFETY IN THE CLINICAL ENVIRONMENT

Given potential risks unique to the pregnant student, any enrolled student or applicant who is pregnant or becomes pregnant should notify the Program Director, in writing, as soon as possible. Pregnant students are required to complete normal program activities, although accommodation will be made to the degree feasible for the program and the institution. The program may request that a pregnant student provide documentation from a medical provider that she is medically capable of performing required program activities and related physical tasks, as outlined in this Handbook.

In keeping with the ALARA Principle (As Low As Reasonably Achievable) on the potential bioeffects of ultrasound, under NO circumstances should a pregnant student be scanned for fetal imaging unless it is a medical procedure ordered by her medical provider.

PROGRAM ULTRASOUND LAB USE

The VUMC DMS Program maintains a dedicated ultrasound lab for student use. While this lab is designed to facilitate the acquisition of technical skills for the student, it is a valuable and limited resource and its use must be treated with the utmost respect

The curriculum plan includes dedicated supervised lab time scheduled with an instructor present. Student scanning in the lab must be supervised by the Program Director or a designated credentialed sonographer. The time of instructors supervising lab time is also a valuable and limited resource, and students are expected to be respectful of instructors' time by being adequately prepared for lab sessions and ready to perform procedures in a timely fashion.

On occasion, there may be slow times in the clinical setting that lend themselves to the practice of scanning skills. In these instances, the clinical instructor for the center may provide the necessary supervision. Any sessions of this type, must have stated objectives and feedback provided by the supervising instructor. Written documentation (email from the supervising sonographer is acceptable) of these sessions should be provided to the Program Director from the supervising sonographer. These ad hoc scanning sessions are restricted to exclude scanning of the fetus. Any mock scanning of the gravid uterus must be arranged by and under direct supervision of the appropriate faculty and/or staff.

During scheduled and supervised lab sessions students are encouraged to participate as the patient, but this participation is STRICTLY voluntary and is in no way required. Any refusal to volunteer as the patient will not affect the student's course grade. Students attest to their understanding of this policy through signing the Orientation Checklist at the beginning of their enrollment in the program.

A student who identifies a need for additional opportunities for mock scanning should discuss his/her concerns with the Program Director. If this need is determined to be sufficient, appropriate arrangements can be made for use of the classroom equipment or with clinical equipment and staff. Any additional mock scanning MUST be arranged with the Program Director.

STUDENT CONDUCT/PROFESSIONALISM

All students are bound by several standards of conduct, as outlined in the CPiAH Catalog, including:

- VUMC Code of Conduct
- VUMC Center for Programs in Allied Health Honor Code
- SDMS Professional Code of Ethics

In order to ensure students clearly understand the behaviors that are expected/acceptable and unacceptable, the following examples are provided:

<u>Maintain a high degree of honesty and integrity</u>

- Hold in strictest confidence all patient and clinical center information
- Maintain patient modesty and privacy
- Provide optimum care for all patients
- Utilize proper communication techniques for patient education, response to patient needs, respect of patient individuality and collaborating with other healthcare team members in the learning and patient care processes
- Exhibit good judgement and critical thinking skills
- Adapt to each situation appropriately

- Seek out opportunities to assist fellow students, clinical staff or faculty
- Demonstrate a wise use of time

Accept responsibility for one's own actions and learning potential

- Maintain professional conduct and appearance during all program assignments
- Demonstrate motivation, enthusiasm, organization and efficiency in carrying out assignments
- Seek out all opportunities for increasing and retaining a progressive knowledge level
- Openly accept and follow instructions provided by faculty, sonographers, physicians and others in positions of authority and respond appropriately
- Adapt one's skill level to become an increasingly functional component of each clinical assignment and promote a pleasant environment
- Arrange for remedial assistance in areas of study where one has a lack of understanding
- Recognize professional and educational limitations while striving to expand them

Practice the art and science of sonography in a professional and ethical manner in order to promote the advancement of the profession

- Document all clinical experiences
- Practice Standard Precautions
- Practice techniques appropriate to verify patient identity prior to an exam
- Perform on-going self-evaluation to identify areas of strength and weakness
- Practice professional responsibility to learn and retain techniques for carrying out functions of the department
- Apply instruction and constructive criticism to practice
- Apply theory to practice
- Utilize all available resources
- Complete all didactic and clinical assignments within the designated time frame
- Practice the ALARA Principle (As Low As Reasonably Achievable)
- Pursue completion of certification exams promptly upon eligibility

Engage in behaviors that are hallmarks of a professional, keeping mind that your actions are seen by peers and other witnesses

- Demonstrate respect and resist participation in criticism for all individuals in the healthcare setting including, but not limited to, faculty, clinical staff, physicians, fellow students, patients and patients' families
- Refrain from using foul or abusive language
- Avoid personal contact unless necessary for safety or the continuity of patient care
- Notify the Clinical Instructor or Program Director of patient complaints
- Report any injury, regardless of severity, promptly to the Clinical Instructor and Program Director
- Respect the property of the Medical Center and other individuals

Disciplinary Action Policy

Any student behavior in violation of any policy of the Vanderbilt University Medical Center, the Center for Programs in Allied Health or the Diagnostic Medical Sonography Program is subject to disciplinary action, up to and/or including dismissal. Disciplinary action will be utilized in a progressive manner, as follows:

- ***Verbal Warning-*** Upon a first violation, a conversation will take place between the student and Program Director to discuss the situation and appropriate corrective measures corrective measures. (Notation of this advisement will be retained in the student's record.)
- ***Written Warning-*** In the event of a second violation, another conversation will be held about the incident between the student, Program Director and a third program representative. This report will include, at minimum, the following information: infraction, discussion, implications of the behavior, corrective measures and future disciplinary action for any repeated incident of this nature. This written documentation will be signed by all individuals present and retained in the student's record.
- ***Probation-*** Upon a third violation, a student who has received both verbal and written warnings regarding inappropriate conduct will be placed on probation. The probationary period length will be, at minimum, the remainder of the current Rotation and no longer than six (6) months. The student will meet with the Program Director about and be notified in writing of the terms of the probation. A copy of this report will be retained in the student's record. If at the end of a period of probation, a student has adhered to terms of the probation and otherwise satisfactorily adhered to institutional and programmatic policies, he or she may be released to good standing. Documentation related to the probation will remain as a permanent part of the student's record.
- ***Temporary Suspension*** – The Program reserves the right to temporarily suspend a student for conduct creating a threatening or disruptive learning environment, as determined by the Program Director. The student's situation will be reviewed according to the Disciplinary Action Policy. The Program Director will notify the student in writing of the conditions of the temporary suspension. If the student is reinstated, the student will work with the Internship Director to address any course work missed during the suspension.
- ***Dismissal-*** A student who does not meet the terms of probation within the specified timeline will be dismissed from the program.

The Program Director provides written notification including the dismissal effective date if a student is dismissed from the program. The dismissed student is required to immediately return to the Program Director all items (keys, ID badges, etc.) that are the property of VUMC. Students who are dismissed from the program may be entitled to a partial tuition refund. Please refer to the CPiAH Catalog for more information. The Dismissal Appeal Process is also described in the CPiAH Catalog.

FACULTY ADVISING POLICY

Student academic and clinical performance evaluation takes place on an ongoing basis throughout each rotation. Classroom performance is evaluated through attendance, assignments and exams. Clinical performance is evaluated through supervising staff weekly evaluations, student weekly reports, clinical competencies and competency challenges. Weighting of each evaluation method will be defined in each course syllabus.

Each student receives faculty advising regarding progress through the Curriculum Plan. Advising occurs in a private and individual manner for each student. Faculty advising sessions occur periodically, but no less frequently than once per Rotation. If a student is in jeopardy of being placed on or is placed on academic or conduct-related probation, faculty advising sessions will occur on a more frequent basis. Advising sessions may be requested at any time by the student or by faculty members. All faculty advising sessions are documented and retained in the student's record.

Each student enrolled in the program has access to faculty and staff members for academic and professional advising. The Program Director is the primary source for this type of student advising; however, the student may approach other faculty members, clinical instructors or staff of the VUMC Ultrasound and/or Radiology Department. Other CPiAH Staff are also available by appointment to assist students as necessary. All official academic advising conducted by Program Faculty and Staff is documented and retained in the student's record.

EVALUATION OF PROGRAM EFFECTIVENESS

The DMS Program utilizes various methods for evaluating the program's effectiveness. Student feedback on the program and courses is routinely gathered through the use of online surveys utilizing the REDCap program. Students should expect routine requests to complete these important surveys throughout their time in the program. Candid feedback is strongly encouraged. Formal grievances, however, should be appropriately communicated through the Grievance Policy and not program/course surveys.

Course and Faculty Evaluation

Evaluation of faculty performance by the Program Director is conducted at the end of each Rotation and periodically, as necessary. Evaluations are made of teaching effectiveness, organization, and accessibility. Student course evaluations provide important feedback for assessing faculty performance.

Clinical Site Evaluation

Students have the responsibility to assist the program in monitoring the effectiveness of the clinical sites. At the end of each Rotation, electronic surveys are distributed through REDCap for anonymous completion. Student input provides necessary feedback to enhance or improve the program's relationship with the clinical centers. This tool is also an excellent opportunity to recognize individual staff members for contributions to the educational experience.

Program Resource Evaluation

The Diagnostic Medical Sonography Program conducts two (2) student surveys regarding program resources and effectiveness during each student's enrollment. These surveys are necessary at various milestones within the curriculum to assess whether the needs of the students are being met throughout the educational experience. While these surveys may seem similar to other program surveys, they serve a different purpose, and each survey collects important information used by the program for its continuous improvement. Candid feedback is encouraged to assist in programmatic review and ongoing improvement.

The VUMC Center for Programs in Allied Health (CPiAH) conducts one student satisfaction survey annually for all VUMC CPiAH students. Sonography students are responsible for providing appropriate information and feedback in this institutional survey.

Graduate and Employer Surveys

The Diagnostic Medical Sonography (DMS) Program accreditor, CAAHEP, requires reporting of outcomes and achievement of designated benchmarks. Feedback from graduates and their employers within the first year of graduation is a valuable tool in program assessment. These surveys and the feedback serve dual purposes: 1) accreditation outcomes are assessed for survey return rates and 2) the feedback provides the DMS Program Advisory Committee with necessary information to keep the

program in tune with the communities of interest. Graduates will be expected to provide necessary information to enhance or improve the program for future students. Additionally, graduates are strongly encouraged to convey the importance of the survey with feedback to his/her employer. Graduate and employer surveys are carried out electronically by emailing a REDCap Survey link.

PROGRAM DRESS CODE

Students are required to dress in an appropriate professional manner, in keeping with VUMC institutional dress code (Appendix D of the CPiAH Catalog).

Student dress in the clinical setting must demonstrate a neat and clean appearance in order to convey a professional appearance to patients, visitors and co-workers. Student clinical attire must consist of the following:

At all VUMC campus and VCH Clinical Centers

- Scrub top and pants or dress/skirt in Pewter color only from Wonder Wink Scrub Shop with the Center for Programs in Allied Health (CPiAH) patch (provided at Orientation) securely attached.
    - *Any visible clothing worn underneath a scrub top MUST be solid and white or of same color as the scrub top/pants.*

At The Center for Women's Imaging (CT/OHO)

- Black slacks/pants (ankle length at minimum)
- CPiAH polo shirt (provided)

Clinical appearance should follow these guidelines:

- Identification badge must be worn at ALL times and in a visible location above the waistline
- Attire should be clean, neat and in good condition
- Shoes MUST be impermeable with enclosed toes and of a solid color, complementary to assigned attire. *(Athletic shoes may be worn if constructed of a non-absorbent material and have no more than 2 complementary colors visible.)*
- Solid lab coat: optional *(color must be Pewter from Wonder Wink Scrub Shop)*
- Hair should be clean and contained in such a manner it does not come in contact with the patient or visitors
- **NO** perfume or cologne should be worn
- Makeup may be worn conservatively
- Nails must remain at an active length and any color worn should be of a neutral or pastel color (***Artificial nails are not permitted in patient care areas at any time)***
- Jewelry must be limited to one ring or wedding set, one functional watch and one pair of small, conservative earrings (***dangling or hoop earrings are not permitted)***
- Tattoos and body piercing (excluding ear piercing) must not be visible at any time
- Adequate personal hygiene must be maintained
- Breath must be free of any offensive odor
- Facial hair must be limited to a neat, well-trimmed mustache

Failure to adhere to the Dress Code and Clinical Appearance Guidelines may result in temporary suspension from the clinical assignment for the remainder of the day. Additional disciplinary action may be engaged, depending on the infraction. Any time missed from the clinical assignment must be made up per the Make-Up Policy.

The didactic course attendance dress code is dress appropriate for entering a medical facility. Specifically, no jeans, sweat pants, shorts, midriffs, tank tops or flip-flop sandals shall be worn in the Medical Center. While on campus, whether or not in clinical locations, the student is associated with and represents the Medical Center, as well as the sonography profession. Students must wear their VUMC identification badge at all times when on the VUMC campus.

CELL PHONE USE POLICY

Cell phone use is **NOT** allowed during classroom or clinical experiences. Personal cell phones, iPads, handheld devices, etc., MUST **be silenced (including vibrations)** and stored out of sight during all scheduled classes, lab sessions, and while in the clinical setting. Cell phones may be checked and/or used during breaks or in between patients, but any use should **NOT** disrupt face-to-face communication or patient workflow. **Violation of the cell phone policy will be considered a deficiency in professionalism and may affect the student's grade and may result in disciplinary action.**

Students are advised that while cell phones or other personal devices may be utilized for educational purposes, those around the student may consider such use as a sign of disinterest in the learning opportunities at hand. Even during down times and breaks, extreme care should be utilized to avoid any misperception of cell phone use.

OUTSIDE EMPLOYMENT

Due to the complex content and intense time commitment associated with the curriculum of the program, students are encouraged to limit outside employment. Any employment and work hours required for the student to maintain an income may not interfere with the completion of his/her academic and clinical assignments.

DISCLAIMER: Students who gain employment in a sonography-related position at VUMC or any other medical facility while enrolled in the DMS Program are in no way acting under the supervision of the program while carrying out responsibilities related to their employment, and they will not receive any clinical credit for examinations or hours performed while functioning as an employee. In addition, under no circumstances may a student stand in for a staff person as a preceptor or supervisor for a DMS Program student on clinical assignment. Students may not, under any circumstances, receive pay or compensation for clinical assignments. Students found in violation of this policy will be subject to disciplinary action, up to and including dismissal from the program.

ADDITIONAL EDUCATIONAL RESOURCES

There is a wealth of educational resources for DMS/Allied Health students to seize learning opportunities. Here is just a mere sampling to get you on your way!

SonoWorld- Excellent resource for free or low-costs to access educational materials and information including video lectures by leading professionals, cases with diagnostic challenges, image library, CME, articles, and textbooks, plus many, many more professional links. **Membership is FREE!**
www.sonoworld.com

SmartBrief- www.smartbrief.com is a leading digital media publisher of targeted business news and information by industry. By combining technology and editorial expertise, SmartBrief delivers the most relevant industry news – curated daily from thousands of sources – in partnership with leading trade associations, professional societies, nonprofits and corporations. ***Sign up for FREE newsletters relating to interests. BE CAREFUL! These newsletters come to your email as often as 2-3 times/week.***
Recommended Newsletters: http://www.smartbrief.com/subscribe
Ultrasound SmartBrief
SmartBrief on Leadership
SmartBrief on Your Career

Society of Diagnostic Medical Sonography (Student membership is welcome and encouraged)
www.sdms.org

American Institute of Ultrasound in Medicine (Student membership is welcome and encouraged)
www.aium.org

Institute for Advanced Medical Education- Since 1992 the Institute for Advanced Medical Education has been a leading provider of continuing medical education, providing practice-changing experiences for physicians, nurses, technologists and other health care professionals. IAME is accredited by the Accreditation Council for Continuing Medical Education...CME is our only business.
https://iame.com/

Pegasus Lectures, Inc. provides the very best in ultrasound continuing medical education for physicians, practicing sonographers and beginning students of sonography.
https://www.pegasuslectures.com/freeCME.php

UltrasoundCases.Info- The site is developed as a teaching file. It contains a large number of general ultrasound cases from the teaching files from the Gelderse Vallei Hospital in Ede, the Netherlands.
Ultrasoundcases.info

MyPacs.Net- mostly radiographic cases here, but some sonography. This is a file share system powered by McKesson Study Share.
www.mypacs.net

Cleveland Clinic Health Library- Access thousands of health articles, videos and tools
https://my.clevelandclinic.org/health?letter=C
Or via www.cchs.net

My Mini Fellowship- Myminifellowship gives you access to some of the best teaching available from Dr. Roy Filly, co-founder of the fetal treatment program and found of the ultrasound department at UCSF. ***There IS a fee associated with membership to this site.***
http://www.myminifellowship.com/

Aunt Minnie- primarily a radiological site, but with sonography intertwined and a dedicated Ultrasound Community section.
www.auntminnie.com
http://www.auntminnie.com/index.aspx?sec=sup&sub=ult (ultrasound community)

Ultrasound Jobs.com- a search engine dedicated to the sonography profession
http://www.ultrasoundjobs.com/

APPENDIX A:
CURRICULUM THREADS

VANDERBILT UNIVERSITY

MEDICAL CENTER

Diagnostic Medical Sonography Program

Curriculum Threads

First Rotation

Didactic Courses:

Sonographic Patient Care
Foundations of Ultrasound and Healthcare (first two (2) weeks online delivery)
Cross-Sectional Anatomy
Abdominal Sonography Techniques I
Gynecological Sonography Techniques I

Clinical Courses:

Clinical Practicum I
Clinical Lab I

The first Rotation is the introduction to patient care techniques, cross-sectional imaging and the application of sonographic techniques for abdominal and gynecological exams. Students are also introduced to the sonography profession. The clinical practicum is correlated with the didactic courses by the performance of competencies that demonstrate student knowledge of the procedure and function of the ultrasound department. Prior to the performance of any assigned competencies, the student must complete a check-list of department functions with the clinical lab instructor under direct supervision. The student is given opportunities for patient contact and observation of sonographic procedures to permit the acquisition of the required basic competencies and competency challenge. The student should also demonstrate a recognition of sonographic anatomy and technique. The clinical lab is correlated with the didactic courses by demonstration and direct supervision/instruction of sonographic techniques related to abdominal and gynecological exams. The students are required to begin the development of the Education Portfolio to be maintained throughout the program.

The required basic **competencies** for Clinical Practicum I are:

Basic Patient Care (10)

The required **competency challenge** for Clinical Practicum I is:

Basic Patient Care

Second Rotation

Didactic Courses:

Foundations of Ultrasound and Healthcare (first two (2) weeks online delivery)
Obstetrical Sonography Techniques I
Basic Physics and Instrumentation
Pathophysiology

Clinical Courses:

Clinical Practicum II
Clinical Lab II

The second Rotation continues to explore professional topics while providing presentation and application of obstetrical sonographic techniques, basic physics and, pathophysiology. The clinical practicum is correlated with the didactic courses by the performance of competencies that demonstrate student knowledge of abdominal and gynecological exams. Competencies are broken down into organ segments to permit scanning clinical patients and progressive technical achievement within time allowed in the clinical setting. Students are given the opportunity to demonstrate abdominal and gynecological sonographic techniques and competency during clinical assignments. The clinical lab is correlated with the didactic courses by the demonstration and direct supervision/instruction of sonographic techniques related to obstetrical sonographic exams and continued performance of basic, abdominal and gynecological competencies.

The required segmental abdominal and gynecological **competencies** for Clinical Practicum II are:

Aorta/IVC (10)
Liver (10)
Gallbladder (10)
Pancreas (10)
Renals (10)
Spleen (10)
Pelvis-UT (10)
Pelvis- OV (10)

These segmental ab/gyn competencies may be completed during Clinical Practicum III.

The required **competency challenges** for Clinical Practicum II are:

Any two (2) of the abdominal and gynecological segmental competencies

Third Rotation

Didactic Courses:

Foundations of Ultrasound and Healthcare (first two (2) weeks online delivery)
Abdominal Sonography Techniques II
Gynecological Sonography Techniques II
Advanced Physics and Instrumentation

Clinical Courses:

Clinical Practicum III
Clinical Lab III

The third Rotation continues to explore professional topics and provides presentation and application of pathology and its correlation to sonographic findings and techniques for abdominal and gynecological exams. Physics is taken to a more advanced level to include the Doppler principle, QA and Bioeffects associated with diagnostic sonography. The clinical practicum is correlated with the didactic courses by the demonstration of progressively independent performance of abdominal and gynecological competencies. Students are given opportunities to demonstrate the progressive technical skill for abdominal and gynecological exams, in addition to segments of obstetrical examinations, by performing the required competencies. The clinical lab is correlated with the didactic courses by demonstration and direct supervision/instruction of sonographic techniques for performing complete abdominal and gynecological exams and the associated pathology protocols, along with the progression of skills for obstetrical exam techniques.

The required **competencies** for Clinical Practicum III are:

Segmental Ab/Gyn

Completion of abdominal and gynecological segmental competencies

Segmental Ob

Fetal Head (10)
Fetal Extremities/Spine (10)
Fetal Abdomen (10)
Placenta, Umbilical Cord and Amniotic Fluid (10)
Fetal Heart (10)

The segmental ob competencies may be completed during Clinical Practicum IV.

The required **competency challenges** for Clinical Practicum III are:

Any five (5) of the remaining abdominal and gynecological segmental competencies
Any one (1) obstetrical segmental competency

Fourth Rotation

Didactic Courses:

Foundations of Ultrasound and Healthcare (first two (2) weeks online delivery)
Obstetrical Sonography Techniques II
Superficial Structure Sonography Techniques
Advanced Abdominal Sonography Techniques
Medical Ethics and Law

Clinical Courses:

Clinical Practicum IV
Clinical Lab IV

The fourth Rotation continues to explore professional topics and provides presentation and application of pathology and its correlation to sonographic findings and techniques for obstetrical exams. The application of superficial structure and advanced abdominal sonographic techniques is also presented. The techniques included are thyroid, breast, scrotum, abdominal vascular, GI tract, non-cardiac chest, and retroperitoneal pathology. The clinical practicum is correlated with didactic courses by the performance of competencies based on segments of obstetrical examinations in a progressive and independent fashion, along with complete abdominal and gynecological examinations, to include transvaginal imaging of the female pelvis. The clinical lab is correlated with the didactic courses by opportunities for demonstration and performance of all imaging competencies under direct supervision/instruction including abdominal, gynecological, obstetrical and superficial structures.

The required **competencies** for Clinical Practicum IV are:

Segmental Ob

Completion of the obstetrical segmental competencies

Segmental Ab/Gyn

Complete Abdomen (25)
Minimum of 3 technically difficult exams required
Minimum of 5 patients with some form of pathology identified
RUQ (10) or additional complete abdomens
Pelvis w/Transvaginal (20)
Minimum of 2 post-menopausal exams required
Minimum of 5 patients with some form of pathology identified

The complete ab/gyn competencies must be completed by mid-term of Clinical Practicum VI.

The required **competency challenges** for Clinical Practicum IV are:

The remaining one (1) segmental abdominal or gynecological competencies
The remaining four (4) segmental obstetrical competencies

Fifth Rotation

Didactic Courses:

Foundations of Ultrasound and Healthcare (first two (2) weeks online delivery)
Certification Preparation (online delivery)
Advanced Obstetrical & Gynecological Sonography Techniques
Introduction to Vascular Sonography

Clinical Course:

Clinical Practicum V

The fifth Rotation continues to explore professional topics and provides presentation of techniques for advanced imaging of the gynecological and obstetrical exam which include biophysical profile, maternal disorders in pregnancy, genetic abnormalities, cervical measurements in pregnancy, ultrasound guided procedures and the performance of Doppler examinations in pregnancy. Didactic presentations also include information to prepare students for performing basic vascular studies. Students are required to begin review and preparation for national certification upon graduation. Required documentation of progress and activities will monitor students' preparation. The clinical practicum is correlated to the didactic courses through the performance of complete abdominal, gynecological, obstetrical, and superficial structure examinations demonstrating progressive technical achievement and competency. Students are also required to begin developing basic vascular sonography techniques by performing the assigned exams, documenting a progression of skills.

The required **competencies** for Clinical Practicum V are:

Complete Ab/Gyn

Continued performance of complete abdomen and gynecological competencies

Complete Ob

Fetal Size/Growth and Detailed Anatomy (10)
Fetal Anatomy (10)
Survey and Fetal Size/Growth (15)
Minimum of 3 exams >28weeks gestation required
1st Trimester (10)

Superficial Structures

Thyroid (10)
Minimum of 2 patients must have some form of pathology identified
Scrotum (10)
Minimum of 2 patients must have some form of pathology identified
Breast (5)
Minimum of 2 patients must have some form of pathology identified

Vascular

Lower Extremity Venous (3)
Upper Extremity Venous (3)
Carotid (3)

The required **competency challenges** for Clinical Practicum V are:

Any one (1) complete:
Abdomen
Pelvis with Transvaginal
Obstetric (combined Fetal Anatomy with Survey and Fetal Size/Growth)

Sixth Rotation

Didactic Courses:

Foundations of Ultrasound and Healthcare (Capstone Presentation)
Case Study Review
Registry Review
Basic Vascular Sonography Lab

Clinical Course:

Clinical Practicum VI

The sixth Rotation provides an opportunity for students to demonstrate personal foundation for career development and the review of all information related to the abdominal, obstetrical/gynecological National Certification Exams. The students are also provided with an introduction to basic vascular sonography to include carotid and peripheral venous and arterial exams in the lab setting with the demonstration of technique. The clinical practicum is correlated to didactic courses by the demonstration of competency in the performance of complete abdominal, gynecological, obstetrical and superficial structure sonographic examinations. Entry-level competence is required for the advanced imaging techniques to include biophysical profile, multiple gestations, Doppler examinations and ultrasound guided procedures. Basic vascular sonography competency is demonstrated through the progressive demonstration of knowledge and skills in the assigned competencies, per the Clinical Education Plan. Each student is also required to demonstrate entry-level proficiency through the completion of the Final Competency Assessment. At the end of the Rotation, each student will participate in an Exit Interview with the Program Director to finalize all education documentation and review the Program's expectations for graduates.

The required **competencies** for Clinical Practicum VI are:

Complete Ab/Gyn

Completion of complete abdominal and gynecological competencies by mid-term

Complete Ob

Completion of all obstetrical competencies

Superficial Structures

Completion of superficial structure competencies

Advanced Imaging

Biophysical Profile (5)
Multiple Gestations (2)
Abdominal Doppler (3)
U/S Guided Procedures (2)

Vascular

Lower Extremity Venous (3)
Upper Extremity Venous (3)
Carotid (3)

The required **competency challenges** for Clinical Practicum VI are:

Final Competency Assessment
One (1) Thyroid competency (may be completed after study in Clinical IV)
One (1) Scrotum competency (may be completed after study in Clinical IV)