



School Catalog

Student Handbook

2020

January 1, 2020 to December 31, 2020



Community Regional Medical Center
Advanced Cardiac Sonography Program

2823 Fresno Street ♦ Fresno, CA 93721

Phone: (559) 459-2731 ♦ Fax: (559) 459-2935

Web: www.communitymedical.org

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TABLE OF CONTENTS

Table of Contents	3
Welcome and Introduction.....	5
Mission Statement.....	5
Faculty.....	6
Description of Profession.....	6
Scope of Practice.....	7
Overview of the Advanced Cardiac Sonography Program.....	7
State Approval	7
Program Catalog, Brochure, and School Performance Fact Sheet	8
Admissions and Enrollment.....	8
A.D.A. Technical Standards	9
Language Proficiency - General	10
Language Proficiency - Foreign Students.....	10
International Students (Visa Services).....	10
Evaluation of Prior Credit.....	11
Ability to Benefit	11
Statement of Charges	11
Financial Aid.....	12
Cancellation/Withdrawal/Refund Policies.....	12
Bankruptcy.....	14
Acceptance of Credits from Other Institutions.....	14
Notice Concerning Transferability of Credits and Credentials Earned at our Institution.....	14
Placement Services	15
Location of Classes.....	15
Facilities and Equipment.....	15
Library Resources	15
Student Services.....	15
Housing.....	15
Record Keeping: Custodian of Records.....	15
Cardiovascular Credentialing International (C.C.I.) Examination	16
Grievances.....	17
Complaints.....	17
Policies and Procedures Manual	19
Accidents.....	20
Affirmative Action.....	20
Attendance	20
Books	21
Communicable Diseases	21
Confidentiality	22
Disciplinary.....	22
Dress Code.....	23
Funeral Leave.....	23
Grading	24
Graduation.....	24
Grievance	25
Hepatitis B Vaccine	25

Liability Release-Assumption of Risks Form.....	26
Human Subjects for Non-Clinical Scanning.....	27
Infectious Disease.....	27
Jury Duty.....	28
Membership in Professional Organizations.....	28
Military Absence.....	28
Moral and Ethical Behavior and Cheating Policy.....	29
Online Grading.....	30
Pregnancy.....	30
Progression & Dismissal (General)	30
Progression & Dismissal (Grades)	31
Progression & Dismissal (Clinical Rotation)	31
Sexual Harassment.....	32
Sick Leave.....	33
Smoking.....	33
Supervision	33
Tardiness.....	34
Student Work Policy.....	34
Advanced Cardiac Sonography Course Descriptions.....	35
Advanced Cardiac Sonography Class Schedule	39

WELCOME AND INTRODUCTION

Welcome to the **CRMC Advanced Cardiac Sonography Program!** We, the sonography faculty and staff, congratulate you on your acceptance to the program. We look forward to sharing our knowledge and facilitating your career advancement in the field of cardiac sonography.

This handbook is designed to serve as a reference and resource for information relating to your student activities during your progress through the program. Please take the time to read it carefully. If you have any questions that are not answered in this book, please feel free to contact the program director for clarification or additional information.

The program requires 18 consecutive months for the student to complete. The curriculum consists of online, classroom, laboratory, library research, and clinical practical experience. The program will be run in a hybrid fashion with the majority of the program delivered online with minimal SKYPE instruction. One half of the clinical internship (120 hours) will be completed at Community Regional Medical Center. The other half (120 hours) will be completed by distance learning (a combination of SKYPE instruction and assigned projects).

As a student in the **CRMC Advanced Cardiac Sonography (ACS) Program**, you represent CRMC and the ACS Program. The highest ethical and professional standards of conduct will be expected of you at all times. We, the faculty, wish you success as you expand your health career.

MISSION STATEMENT

WE, THE FACULTY OF CRMC'S ADVANCED CARDIAC SONOGRAPHY PROGRAM, BELIEVE:

Learning is a common endeavor of instructor and learner – a process of acquiring skill, knowledge, understanding and appreciation through active participation, problem solving, and application of scientific principles to real and simulated situations. Learning is facilitated when there is comfortable interaction among the learners and between the instructor and the learner, allowing for experiences and ideas to be shared.

The learning environment should be one that respects individuality and is unrestricted by considerations of age, sex, race, creed, social or economic status, or handicap. Learning is enhanced by commendation for work well done, encouragement after failure, kind assistance whenever the need is a rigorous one, and involves a strong commitment on behalf of the student. Students are expected to continuously strive to improve their knowledge and skills by participating in educational and professional activities. The educational objective of the program is to provide information and experiences, which will encourage the development of a self-motivated individual to become a responsible, well-trained advanced cardiac sonographer.

Consistent with the early foundations of Sonography education as a whole, this educational philosophy and practicing attitudes are evolved from and shared, especially with those of nursing and radiologic technology. We emphasize respect for all other medical, diagnostic and therapeutic disciplines and applaud the complimentary nature of their mutually supporting functions.

FACULTY

The Advanced Cardiac Sonography **Program Director and instructor** is **Dr. Joy Guthrie**. Dr. Guthrie is an Assistant Professor of Medicine, UCSF-Fresno in Echocardiography. She is registered in all ten specialty areas offered by the American Registry of Diagnostic Medical Sonography and has recently passed the ACS credentialing exam offered by CCI. Dr. Guthrie has nineteen years of consecutive teaching experience for two CAAHEP accredited DMS programs. She has over 30 years of clinical experience and currently serves as Advanced Practice Sonographer at Community Regional Medical Center in Fresno, responsible for the technical oversight of all sonography services. Dr. Guthrie has a PhD in Public Health-Epidemiology and a Doctorate of Health Science (DHSc.). She is also the past President of the Society of Diagnostic Medical Sonography. Dr. Guthrie has over 100 diagnostic medical sonography program graduates (General, Adult Cardiac, Pediatric Cardiac, Vascular, and Advanced Cardiac) that are gainfully employed in the field of sonography (a 98% placement rate).

The Advanced Cardiac Sonography Program's **Medical Advisor** is **Dr. Teresa Daniele**, Assistant Professor of Medicine, UCSF. Dr. Daniele specializes in cardiac consultation, nuclear cardiology and cardiac PET/CT. She is board certified in Cardiology, Nuclear Cardiology and Echocardiography and maintains a special interest in women's heart disease. Dr. Daniele received her medical degree from Ross University School of Medicine and completed her internal medicine residency at Brown University.

The **Clinical Coordinator** for the Advanced Cardiac Sonography Program is **Dr. Joy Guthrie** (see above).

The ACSP Administrative Assistant is **Michael Reinhold**. Michael is a long-time Central Valley native with a rich history of service to people from all walks of life. He has exceptional organizational skills, is proficient on the computer, has an extensive background in media production, and is an accomplished photographer.

DESCRIPTION OF PROFESSION

The Diagnostic Medical Sonographer/Vascular Technologist utilizes high frequency sound waves and other diagnostic techniques for medical diagnosis. The professional level of this health care service requires highly skilled and competent individuals who function as integral members of the health care team. The Diagnostic Medical Sonographer/Vascular Technologist must be able to produce and evaluate ultrasound images and related data that are used by physicians to render a medical diagnosis. They must acquire and maintain specialized technical skills and medical knowledge to render quality patient care.

The Advanced Cardiac Sonographer is a sonographer who practices at an advanced level in the echocardiography laboratory. The objective of this educational program is to prepare graduates who are committed to improving lab quality and efficiency through preparing preliminary echo assessments; performing advanced echocardiograms; mentoring fellows, students, residents, and staff; developing and implementing educational plans; facilitating continuous quality improvement; and coordinating cardiac ultrasound research.

Our ACSP prepares graduates for United States Department of Labor Occupational Code #29-2032 (Diagnostic Medical Sonographer).

SCOPE OF PRACTICE

The Advanced Cardiac Sonographer is a highly skilled individual qualified by academic and clinical experience to provide diagnostic patient services using ultrasound and related diagnostic techniques. The Advanced Cardiac Sonographer is responsible for producing the best diagnostic information possible with the available resources. They acquire and evaluate data, while exercising discretion and judgment in performance of the clinical examination. The cardiac sonographer is able to:

Obtain, review, and integrate pertinent

- Patient history, physical examination, and supporting clinical data to facilitate optimum diagnostic results.

Perform diagnostic procedures by

- Producing, accessing, and evaluating ultrasound images and related data that are used by physicians to render a medical diagnosis.

Provide interpreting physicians with an

- Oral or written summary of technical findings.

Provide patient and public education and

- Promote principles of good health.

OVERVIEW OF THE ADVANCED CARDIAC SONOGRAPHY PROGRAM

The **CRMC Advanced Cardiac Sonographer Program** is an 18 month allied vocational health program. The CRMC Advanced Cardiac Sonography Program has been developed in response to the Cardiology and Echocardiography profession request and need to create a career track for sonographers who practice at an advanced level in the echocardiography laboratory. The objective of this educational program is to prepare graduates who are committed to improving lab quality and efficiency through preparing preliminary echo assessments; performing advanced echocardiograms; mentoring fellows, students, residents, and staff; developing and implementing educational plans; facilitating continuous quality improvement; and coordinating cardiac ultrasound research. The purpose of the program is to provide didactic education and practical experience as preparation for employment as an advanced Cardiac Sonographer in a medical imaging facility.

The program is divided into two components...didactic and clinical education.

The didactic portion of the program covers a wide variety of advanced cardiac sonography modules including clinical, quality assurance, administrative and research modules. The curriculum students are required to complete in order to graduate is included on a separate sheet within this handbook.

Each student must complete all classes in the didactic program in conjunction with completing the clinical education component.

STATE APPROVAL

Community Regional Medical Center (CRMC) is a private, not-for-profit institution and is approved to operate as an accredited institution by the California Bureau for Private Postsecondary Education (BPPE). Approval to operate means that CRMC has been found in compliance with the standards set forth in the California Private Postsecondary Education Act of 2009 (California Education Code, Title 3,

Division 10, Part 59, Chapter 8) and Title 5, Division 7.5 – Private Postsecondary Education of the California Code of Regulations.

Any questions that a student may have regarding this catalog that have not been satisfactorily answered by the institution may be directed to the Bureau for Private Postsecondary Education at:

B.P.P.E. Mailing Address

P.O. Box 980818
West Sacramento, CA 95798-0818

B.P.P.E. Physical Address

2535 Capitol Oaks Drive, Suite 400
Sacramento, CA 95833

B.P.P.E. Phone Numbers

(888) 370-7589 or (916) 431-6959
Fax Number: (916) 263-1897
Website: www.bppe.ca.gov

PROGRAM CATALOG, BROCHURE, AND SCHOOL PERFORMANCE FACT SHEET

CRMC will provide a hardcopy of the school catalog to any person upon request. In addition, CRMC will provide student brochures to any interested person as well as prospective students prior to enrollment. The School Catalog will be updated every year.

As a prospective student, you are encouraged to review this catalog prior to signing an enrollment agreement. You are also encouraged to review the School Performance Fact Sheet, which must be provided to you prior to signing an Enrollment Agreement. These documents contain important policies and performance data for the institution.

ADMISSIONS/ENROLLMENT

Admission Prerequisites

PRIOR to becoming eligible for the program, the following prerequisites **MUST** be met:

- **A Bachelor's Degree (Master's preferred)** (*In any field of study*)
- **A credentialed sonographer in Adult Echocardiography (RDCA or RCS).**
- **Minimum of three years of clinical experience in an echocardiography laboratory.**

In **ADDITION**, the following courses **MUST** have been passed with a cumulative grade of 2.5 or higher, with no individual grade lower than 2.0:

- **Anatomy** (*This course must include a lab.*)
- **Physiology** (*This course must include a lab.*)
- **Medical Terminology**
- **General Physics** (*This course does NOT need to include a lab.*)
- **Math** (*Algebra or higher. Statistics will also suffice.*)
- **English** (*This prerequisite may be met by a variety of courses including Grammar or Composition*)

- **Communication Skills** (*Note: This prerequisite may be met by a variety of courses including Speech or Group Discussion*)

SPECIAL NOTE:

- Applicants must be able to complete the required onsite clinical internship of 120 hours (three weeks) in Fresno, CA.

Additional Requirements and Standards

- For applicants accepted into the program, these requirements and standards must be met before the actual beginning of the cohort:
 - Must successfully complete and pass a drug screening test and background check
 - Must provide proof of U.S. citizenship
 - State photo ID license and social security card minimum
 - A visa is not proof of U.S. citizenship, and is not acceptable
 - Must meet the physical minimum standard for a sonography job qualification
 - Must be proficient in the written and verbal language of college level English
 - All course work, classes, and clinical work will be instructed in English only
 - A prospective student must be able to fully understand the terms and conditions of the Enrollment Agreement in English prior to acceptance

A.D.A TECHNICAL STANDARDS

The Sonographer must have sufficient strength, motor coordination, and manual dexterity to:

- Transport, move, lift, and transfer patients from a wheelchair or cart to a sonography table or bed.
- Move, adjust, and manipulate a variety of sonographic equipment, including the physical transportation of mobile sonographic machines, in order to complete examinations on the patient according to established procedure and standards of speed and accuracy.

The Sonographer must be capable of:

- Handling stressful situations related to technical and procedural standards and patient care situations.
- Providing physical and emotional support to the patient during the sonographic procedures, being able to respond to situations requiring first aid and providing emergency care to the patient in the absence of, or until the physician arrives.
- Communicating verbally in an effective manner in order to direct patients during sonographic examinations.
- Visually recognizing anatomy on a CRT screen.
- Reading and interpreting patient charts and requisitions for sonographic examinations.

The Sonographer must have the mental and intellectual capacity to:

- Calculate and select proper technical factors according to the individual needs of the patient and the requirements of the procedure's standards of speed and accuracy.

- Review and evaluate the recorded images on a CRT screen and archiving system for the purpose of identifying patient pathology if present, accurate procedural sequencing, completion of a diagnostic examination, and other appropriate and pertinent technical qualities.

The section above was published by the United States government in conjunction with the Americans with Disabilities Act (ADA). For more information: <http://www.ada.gov/>

LANGUAGE PROFICIENCY - GENERAL

The student must have the ability to read and write English at the level of a graduate of an American high school as demonstrated by the possession of a high school diploma, GED or passage of the California high school proficiency exam.

All enrollment-related documents, including the Enrollment Agreement and the School Performance Fact Sheet, are printed in English. If English is not your primary language, you have the right to retain an interpreter at your own cost to obtain a clear explanation of the terms and conditions of the Enrollment Agreement, including the cancellation and refund policies, and other enrollment related documents, in your primary language

All course instruction will be conducted using the English language.

LANGUAGE PROFICIENCY - FOREIGN STUDENTS

The Diagnostic Medical Sonography Program requires the completion of standardized testing in English language proficiency by any applicant who: 1) is currently living in a country (or a region of a country) where English is not the primary language, or 2) is currently residing legally in the United States but grew up in a country (or region of a country) where English is not the primary language.

Applicants in either of these two categories must demonstrate English proficiency by providing official transcripts demonstrating the minimum scores on the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS). These are the required passing scores:

	IELTS	TOEFL (iBT)
Overall Exam:	6	61
Writing:	5.5	13
Listening:	n/a	15
Reading:	5.5	15

For more information:

TOEFL: <http://www.toeflgoanywhere.org/>

IELTS: <https://www.ielts.org/>

INTERNATIONAL STUDENTS (VISA SERVICES)

Community Regional Medical Center is NOT approved to issue Visas to international students.

EVALUATION OF PRIOR CREDIT

Community Regional Medical Center does not accept prior credit earned for sonography coursework completed at other regionally accredited institutions, military schools, or foreign institutions to be applied towards our Advanced Cardiac Sonography Program. In addition, CRMC does not accept credits earned through examinations or advanced placement courses.

CRMC does not allow students to challenge courses, nor does it grant credit for experiential learning.

ABILITY TO BENEFIT

“Ability to Benefit” is defined as the demonstrated aptitude to successfully complete the educational program and subsequently be employed. The Advanced Cardiac Sonography Program faculty has determined that ‘ability to benefit’ is demonstrated by:

- **A Bachelor’s Degree (Master’s preferred) (*In any field of study*)**
- **Experience as a credentialed sonographer in Adult Echocardiography (RDCS or RCS)**
- **A minimum of three years of clinical experience in an echocardiography laboratory**

The completion of the following college-level courses (passed with a grade of 2.5 or higher):

- **Anatomy**
- **Physiology**
- **Medical Terminology**
- **General Physics**
- **Math**
- **English**
- **Communication Skills**

STATEMENT OF CHARGES

The student is responsible for the following tuition and fees pertaining to the program’s required course of study completed during the designated enrollment period.

TUITION

Tuition	<u>\$8,000.00</u>
TOTAL TUITION	\$8,000.00

ADDITIONAL EXPENSES*

Application Fee (Non-Refundable)	\$50.00
Background Clearance & Drug Screening	\$66.00
Immunizations	\$30.00
Books*	\$700.00
Materials*	\$50.00
Student Tuition Recovery Fee (STRF)	<u>\$0.00</u>
TOTAL ADDITIONAL EXPENSES	\$896.00

TOTAL PROGRAM EXPENSE*

\$8,896.00

**Estimates – Prices Subject to Change*

<u>TOTAL CHARGES FOR THE CURRENT PERIOD OF ATTENDANCE</u>	<u>\$8,896.00</u>
<u>ESTIMATED TOTAL CHARGES FOR THE ENTIRE EDUCATIONAL PROGRAM</u>	<u>\$8,896.00</u>
<u>TOTAL CHARGES THE STUDENT IS OBLIGATED TO PAY UPON ENROLLMENT</u>	<u>\$5,000.00</u>

These fees do not include travel and lodging fees which are the sole responsibility of the student. These fees will vary depending on the place of residence of each student. There are three weeks (Mon-Friday) required residencies during this program.

FINANCIAL AID

State & Federal Financial Aid

The institution does not participate in any federal or state financial aid programs.

Student Loans

In the event the student obtains a loan to pay for an educational program, the student will have the responsibility to repay the full amount of the loan plus interest, less the amount of any refund.

If the student is eligible for a loan guaranteed by the federal or state government and the student defaults on the loan, both of the following may occur:

- The federal or state government or a loan guarantee agency may take action against the student, including applying any income tax refund to which the student is entitled to reduce the balance owed on the loan.
- The student may not be eligible for any other federal student financial aid at another institution or other government assistance until the loan is repaid.

CANCELLATION/WITHDRAWAL/REFUND POLICIES

Student’s Right to Cancel/Withdraw

The student may cancel their Enrollment Agreement at any time prior to midnight on the 7th (seventh) day following the date of their signature or the first day of class, whichever is later, and receive a refund of all fees paid (minus the application fee). The student must supply the Program Director with a signed letter informing the Program Director of their intent to withdraw from the program within the allotted acceptable time. Upon expiration of this cancellation period, all fees paid are subject to the refund policies outlined in this agreement.

Refund Policies

State of California Student Tuition Recovery Fund (STRF)

The State of California established the Student Tuition Recovery Fund (STRF) to relieve or mitigate economic loss suffered by a student in an educational program at a qualifying institution, who is or was a California resident while enrolled, or was enrolled in a residency program, if the student enrolled in the institution, prepaid tuition, and suffered an economic loss. Unless relieved of the obligation to do so, you must pay the state-imposed assessment for the STRF, or it must be paid on your behalf, if you

are a student in an educational program, who is a California resident, or are enrolled in a residency program, and prepay all or part of your tuition.

You are not eligible for protection from the STRF and you are not required to pay the STRF assessment, if you are not a California resident, or are not enrolled in a residency program.

It is important that you keep copies of your enrollment agreement, financial aid documents, receipts, or any other information that documents the amount paid to the school. Questions regarding the STRF may be directed to the Bureau for Private Postsecondary Education, 2535 Capitol Oaks Drive, Suite 400, Sacramento, CA 95833, (916) 431-6959 or (888) 370-7589.

To be eligible for STRF, you must be a California resident or are enrolled in a residency program, prepaid tuition, paid or deemed to have paid the STRF assessment, and suffered an economic loss as a result of any of the following:

1. The institution, a location of the institution, or an educational program offered by the institution was closed or discontinued, and you did not choose to participate in a teach-out plan approved by the Bureau or did not complete a chosen teach-out plan approved by the Bureau.
2. You were enrolled at an institution or a location of the institution within the 120 day period before the closure of the institution or location of the institution, or were enrolled in an educational program within the 120 day period before the program was discontinued.
3. You were enrolled at an institution or a location of the institution more than 120 days before the closure of the institution or location of the institution, in an educational program offered by the institution as to which the Bureau determined there was a significant decline in the quality or value of the program more than 120 days before closure.
4. The institution has been ordered to pay a refund by the Bureau but has failed to do so.
5. The institution has failed to pay or reimburse loan proceeds under a federal student loan program as required by law, or has failed to pay or reimburse proceeds received by the institution in excess of tuition and other costs.
6. You have been awarded restitution, a refund, or other monetary award by an arbitrator or court, based on a violation of this chapter by an institution or representative of an institution, but have been unable to collect the award from the institution.
7. You sought legal counsel that resulted in the cancellation of one or more of your student loans and have an invoice for services rendered and evidence of the cancellation of the student loan or loans.

To qualify for STRF reimbursement, the application must be received within four (4) years from the date of the action or event that made the student eligible for recovery from STRF.

A student whose loan is revived by a loan holder or debt collector after a period of non-collection may, at any time, file a written application for recovery from STRF for the debt that would have otherwise been eligible for recovery. If it has been more than four (4) years since the action or event that made the student eligible, the student must have filed a written application for recovery within the original four (4) year period, unless the period has been extended by another act of law.

However, no claim can be paid to any student without a social security number or a taxpayer identification number.

CRMC DMS Program Student Refund Policy (California Resident)

If the student wishes to withdraw from the program they are to notify the program director of their wish to cancel the enrollment agreement or to withdraw from the institution and obtain a refund. The following procedure will apply to obtain a refund of tuition:

A student who withdraws from the CMC DMS Program will receive a refund of tuition, if one is due, within 30 days following the student's withdrawal. In the event that a student does not begin classes, all monies paid for tuition and fees, with the exception of the \$50 application fee, are refundable. In addition, the student may withdraw from the program after instruction has started, and may be entitled to a refund if the student has completed 60% or less of the term of instruction. The following formula will be used to determine the amount of refund to the student: $(\text{term tuition} \div \text{term hours}) \times \text{term hours attended} = \text{the amount owed by the student}$. The refund will be the amount in excess paid by the student.

If the student has received federal student financial aid funds, the student is entitled to a refund of monies not paid from federal student financial aid program funds.

Fees will be refunded according to the refund percentage. An administrative fee of \$100 will be assessed to any student who withdraws or goes on leave from the institution on or after the first day of the semester. Refunds are made within 30 days of the withdrawal date.

BANKRUPTCY

The institution does **not** have a pending petition in bankruptcy, is not operating as a debtor in possession, has not filed a petition within the preceding five years, or had a petition in bankruptcy filed against it within the preceding five years that resulted in reorganization under Chapter 11 of the United States Bankruptcy Code (11 U.S.C. Sec. 1101 et seq.)

ACCEPTANCE OF CREDITS FROM OTHER INSTITUTIONS

The prerequisite coursework credits will be accepted from any state or regionally accredited university. CLEP examination scores will also be accepted for credit. There are no admissions requirements for ability-to-benefit students. Specific coursework in sonography will not be accepted from another college or university. The institution has not entered into an articulation or transfer agreement with any other college or university.

NOTICE CONCERNING TRANSFERABILITY OF CREDITS AND CREDENTIALS EARNED AT OUR INSTITUTION

The transferability of credits you earn at CRMC is at the complete discretion of an institution to which you may seek to transfer. Acceptance of certificate you earn in the Advanced Cardiac Sonography Program is also at the complete discretion of the institution to which you may seek to transfer. If the credits or certificate that you earn at this institution are not accepted at the institution to which you seek to transfer, you may be required to repeat some or all of your coursework at that institution. For this reason you should make certain that your attendance at this institution will meet your educational goals. This may include contacting an institution to which you may seek to transfer after attending CRMC to determine if your credits certificate will transfer.

PLACEMENT SERVICES

The program does not provide a specific placement services, however, each student is provided a rotational clinical experience to allow prospective employers to work with the student within the confines of their respective educational program.

LOCATION OF CLASSES

All Advanced Cardiac Sonography Program classes are held at:

**Community Regional Medical Center
Medical Imaging Department
Trauma Critical Care Building - 3rd Floor
2823 Fresno Street
Fresno, CA 93721**

FACILITIES AND EQUIPMENT

The classroom and laboratory used for the Adult Cardiac Sonography Program are housed within the medical imaging department at Community Regional Medical Center. The equipment utilized within the program includes one Phillips EPIC machine, two Philips IE 33 echocardiography machines, and one Agfa Heartlab PACS system.

LIBRARY RESOURCES

There are two Library sources; the Ultrasound Library is housed in the Program Directors office and has over 40 ultrasound references books, training DVDs, and registry review books/cards. This is available to all sonography students during working hours and books can be checked out after hours. The main hospital Library is accessible to all sonography students that are accompanied with a staff sonographer.

HOUSING

Community Regional Medical Center does not have dormitory facilities under its control and bears no responsibility to find or assist a student in finding housing.

The availability of housing near the medical center is favorable. The median home price in Fresno is \$247,600. The 2019 cost of living index in Fresno County is 107.8 (the US average is 100). Retrieved on 12/15/19 from: http://www.city-data.com/county/Fresno_County-CA.html#ixzz1A556bKsW

RECORD KEEPING: CUSTODIAN OF RECORDS

According to Article 9 of the act (94900) the following records will be kept in a locked file in the Program Director's office:

Academic Records

- The student's records include, but are not limited to, the name, address, telephone number, and e-mail address which will be organized both chronologically and alphabetically.
- The midterm and final exams, as well as the Final Grades
- The courses and units on which the certificate of Completion is based
- The grades earned by each student on all courses within the curriculum
- Health assessment, background check, immunization records, and proof of liability insurance.
- Transcripts are kept permanently by the school.

Financial Records

According to Article 9 of the act (94900) the financial records will be kept in a locked file in the Financial Department at Community Regional Medical Center.

CARDIOVASCULAR CREDENTIALING INTERNATIONAL (C.C.I.) EXAMINATION

Upon successful completion of the **CRMC Advanced Cardiac Sonography Program** students will be eligible to take the CCI Advanced Cardiac Sonographer examination (prerequisite ACS1). Each application is assessed individually for eligibility by CCI.

Although every student is encouraged to apply and successfully pass the Cardiovascular Credentialing International ACS examination, the decision to take the examinations is made voluntarily by the individual student. Examinations incur costs, which are the responsibility of the student. Students are reminded that ability to hold a position as an Advanced Cardiac Sonographer may be dependent upon successful completion of credentialing examination. As the students are credentialed cardiac sonographers upon admission, the decision to take the examination will not restrict the student's ability to practice in the echocardiographic laboratory. Completion of the exam does not indicate in any way a state license to practice sonography.

Registry fees are the student's responsibility; however, it is a program expectation that students will take the examinations in the specialties for which they qualify.

Procedure:

- Students will be provided the necessary documentation to qualify them for the certification examination.
- Students will be counseled by the program director and faculty regarding studying to successfully pass the credentialing examination.
- CCI may change their requirements and/or prerequisites. It is the student's responsibility to inquire about the requirements that are in effect.
- CCI has all examinations available on the computer. Students are not eligible to take the examination until completion of the program. Application cannot be made until this date.
- Information can be obtained from Cardiovascular Credentialing International (CCI) 1500 Sunday Drive, Suite 102, Raleigh, NC 27607. 1 (800) 326-0268
- The program writes a letter of authorization to CCI on behalf of the student. This letter defines the competence and qualifications to sit for the ACS examination. Students who do not complete both the didactic component of the program and clinical internship will not be eligible to take the exam.

GRIEVANCES

Students who are dissatisfied with actions taken by the Program Director may:

1. File a formal grievance with California's Bureau of Private Post-Secondary Education. For contact information, see the "State Approval" section of this catalog.
2. File a formal grievance with C.R.M.C. Vice President, Kudzi Machaca. As per the institution's regulations, depending on the nature of the grievance, the Vice President would either resolve the grievance or forward it to the Human Resources Department for further review.

COMPLAINTS

A student or any member of the public may file a complaint about this institution with the Bureau for Private Postsecondary Education by calling (888) 370-7589 or by filing a complaint form, which can be obtained on the bureau's Internet Web site <http://www.bppe.ca.gov/>.

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COMMUNITY
REGIONAL
MEDICAL CENTER

ADVANCED CARDIAC SONOGRAPHY

Policies and Procedures

It is the intention of this handbook to provide the student with a clear understanding of the operations and policies of the **CRMC Advanced Cardiac Sonography Program**. Students are expected to comply with the policies and procedures contained within this handbook throughout their educational experience.

Accidents:

Policy:

The health and safety of patients, students, and faculty members associated with educational activities are safeguarded as all CRMC DMS and ACS students are covered under the same health services as employees. .

Procedure:

1. Any accident occurring during scheduled clinical program time must be reported to the clinical supervisor. All incidents will ultimately be reported to the program director.
2. Students, who have been exposed to any hazardous substances, including blood or body fluids, will report this immediately as well as file incident reports with the program and clinical site.

Affirmative Action:

CRMC does not discriminate on the basis of sex, ethnicity, or handicap in the educational programs that it operates and is prohibited from discriminating in such a manner by law. All CRMC personnel and persons, vendors and organizations with whom the Hospital does business, are required to comply with all applicable federal and state statutes and regulations designed to promote affirmative action and equal opportunity.

Procedure:

1. Creating and sustaining a climate of equal opportunity is the responsibility of all those associated with the **CRMC Advanced Cardiac Sonography Program** including students.
2. If indicated, a student should report any complaint related to education and equal opportunity to the program director.
3. Hospital's equal opportunity statements apply in clinical settings.

Attendance:

Policy:

Students accepted into the **CRMC Advanced Cardiac Sonography Program** are expected to attend all course lectures, clinical internship, and any other scheduled event that is part of the Program curriculum. Any student unable to attend during the program due to illness or an emergency must follow the procedure outlined below. Students will be responsible for obtaining any information presented and/or handed out during their absence.

Procedure:

1. In the event lecture is to be missed, the student must call the course instructor before class and notify them as to their absence.
2. If a clinical internship day is to be missed, the student must call the Program Director.

Books:

Policy:

Program officials select textbooks for the courses taught. Students are expected to purchase these books prior to the start of classes.

Procedure:

1. Textbooks in ultrasound are expensive, and the faculty does the best they can to minimize this cost.
2. Books are selected not just for the course in which they are required, but also for future reference to facilitate the ongoing learning of the student.

Communicable Diseases:

Policy:

Students may need to be restricted from clinical work settings during the incubation period of a communicable disease and/or during a known period of communicability.

Procedure:

1. Students with a suspected diagnosis of the following diseases must report the infection to the program director. Confirmation and treatment if desired or recommendation will be required:

Chicken pox (required)	scabies/lice
Hepatitis-acute	tuberculosis
Measles (rubella)	

2. During a known period of communicability, students may not work in the clinical setting unless authorized to do so.
3. Students assigned to clinical settings may require restrictions if diagnosed or suspected of having the following communicable diseases:

Conjunctivitis	herpes zoster (shingles)
Hepatitis	herpes simplex (cold sores)
Influenza	skin infections
Herpes Whitlow (finger)	

4. Non-immune students who have been accepted into the program should notify the program director following exposure to any of the following communicable diseases:

Chicken pox	rubella
Mumps	herpes zoster
Hepatitis (acute)	measles

5. Any time missed due to illness or any nature is considered absence and will be handled according to time off policies established by the program.

Confidentiality:

Policy:

Material contained in the student record will not be release to outside parties without the student's written consent for release in accordance with the Federal Privacy Act and the Family Educational Rights Act of 1974.

Information from patient records is highly confidential and is not to be discussed or passed on in any form for any purpose other than education.

Procedure:

1. Student academic and performance records are kept in a locked file in the Program Director's office. Students may review their own records with the program officials at any time.
2. Challenges to the student's record may be made only as to accuracy and not judgment, e.g. the accuracy of recording a grade but not the grade itself.
3. Program officials will provide only verification of attendance in the program to outside parties unless authorized by the student to do otherwise.
4. Any disclosure of confidential information regarding a patient, **including release of pathology or diagnosis to a patient**, could result in dismissal from the program.

Disciplinary:

Policy:

Students who are NOT in compliance with the policies and procedures of this manual are subject to disciplinary action.

Procedure:

1. Written warning: A confidential memo or letter will be addressed to the student describing the infraction. The Program Director will arrange a meeting with the student to discuss and determine a course of action to resolve the situation through the Remediation Process. A description of the infraction and the agreed upon course of action will be presented in writing to the student by the Program Director. A copy of that document will then be forwarded to the Medical Director and a second copy placed in the student's file. A follow-up meeting will take place no longer than 2 weeks following this report to determine if further action is necessary.
2. Probation: A student may be placed on probation on the recommendation of the Program Director. The length of probation will be determined by a course of action necessary to resolve the situation through the Remediation Process. The student will sign written and verbal notice of the probationary terms with a copy placed in their permanent file.
3. Students who feel that disciplinary action has been taken in an unfair manner are referred to the Program Director.

Dress Code:

Policy:

Students accepted into the program must wear dark blue scrubs covered by a lab coat at all times during the clinical internship..

The purpose of the dress code is to look professional in appearance at all times. (“Professional appearance” is at the discretion of the program director.)

Following is a list of “Don’ts.” The list is based on clinical site expectations.

Do NOT wear:

1. Denim or fleece.
2. Loud stripes, prints, floral or neon colors.
3. Colored or patterned hose.
4. Sandals, open-toed shoes or athletic footwear with contrasting colors, brand names, large logos or stripes.
5. T-shirts, jeans, jean-styled slacks, denim, fleece.
6. Excessively high heels.
7. Short skirts, shorts, stirrup pants, and spandex.
8. Women may not wear more than one earring on each ear. Women may not wear earrings anywhere but their ears.
9. Large amounts of makeup, cologne, perfume, aftershave, or colored nail polish.
10. Women with long hairstyles must wear it tied back, and hair must not interfere with patient contact. Nails must be short.
11. Men must always be clean-shaven and mustaches, and beards must be neat and well trimmed.
12. Men’s hair must be short and clean.
13. Men may not wear any earrings.
14. Men’s business attire will include a dress shirt and tie. Pants must be of dress style (no jeans, denim or western styled pants). Footwear must also be of dress style. Cowboy boots and athletic footwear are not acceptable.
15. No gum chewing in clinical sites.

Procedure:

1. The program director, or instructor is responsible for informing students if they are in conflict with the dress code.
2. Students who are not in compliance will be informed privately. They will be given one warning and may be asked to leave the clinical site. They may be sent home and asked to return more appropriately dressed.
3. Students who need more than one warning may be placed on probation.

Funeral Leave:

Policy:

Students will be granted excused funeral leave when appropriate.

Procedure:

1. Requests for funeral leave should be submitted to the program director by phone and followed up with an absence form.
2. Funeral leave will be excused for funerals of spouse, parents, child, grandparent and siblings. All other requests will be reviewed on an individual basis.
3. As a general rule, two days are allowed.
4. Any extended time may result in lengthening of the program and ineligibility to write CCI examination.

Grading:

Policy:

The program uses a standard 4-point grading scale. The program requires a minimum academic and clinical grade of 2.0 in each course. All courses will be given a letter grade.

Procedure:

1. Students are provided with opportunities to accumulate their grade through quizzes and final examinations in each didactic course.
2. Students are provided a midterm assessment and final grade in each clinical course.
3. Grades received on competencies do not directly add to the final grade.
4. A grade of less than a 2.0 in any course is considered a failing grade.
5. The cumulative grade point average must be 2.0 or higher each course level for students in the **CRMC Advanced Cardiac Sonography Program** to remain in the program.

Graduation:

Policy:

The hospital conducts a graduation ceremony for the **CRMC Advanced Cardiac Sonography Program**. Students are expected to participate in these exercises. The program assists the graduating class in conducting a graduation ceremony at the conclusion of the program.

Procedure:

1. Each student is encouraged and expected to attend the graduation ceremony.
2. Each student may invite a limited number of friends and relatives to the graduation ceremony.
3. The program director is responsible for the content of the graduation ceremony, however, students may submit specific requests regarding speakers, music, food, etc.

4. Students must have completed all obligations in order to graduate. A resume must be on file, along with all successfully completed competencies.

Grievance:

Policy:

Students who are dissatisfied with the actions taken by the program director may follow the Grievance Policy available through CRMC Human Resources.

Hepatitis B Vaccine:

Policy:

CRMC Advanced Cardiac Sonography students are required to read “Bloodborne Facts”, “Hepatitis B Vaccine” and “Infectious Disease” policies included in this handbook.

Procedure:

1. All students will be required to either receive the hepatitis B vaccine or sign the declination.
2. Students will be required to sign the declination while they are receiving the vaccine until the 3rd shot is received and documents are in their file.
3. The Liability Release and Declination is attached. A copy will be provided to students during their orientation.
4. All students are strongly urged to take this vaccine to protect them during their clinical training.



Liability Release – Assumption of Risks Form

I have read the attached statement about hepatitis B and the hepatitis B vaccine. I have had an opportunity to ask questions and understand the benefits and risks of hepatitis B vaccination as well as the risks of not receiving the vaccination. I do not wish to receive the vaccination series at this time and voluntarily assume the risks inherent in not receiving the vaccine series and hereby further release Community Regional Medical Center, its officers, employees and agents from any and all liability, loss or damage that I may suffer or incur from whatever source in the event of any actual or potential exposure or infection due to my decision not to receive the vaccination.

Student Hepatitis B Vaccine Declination

I understand that due to my occupational exposure to blood or other potentially infectious materials. I may be at risk of acquiring hepatitis B virus (HBV) infection. I have been advised of the importance of being vaccinated with hepatitis B vaccine from a licensed health care provider. However, I decline hepatitis B vaccination at this time. I understand that by declining this vaccine, I continue to be at risk of acquiring hepatitis B, a serious disease. If in the future I want to be vaccinated with hepatitis B vaccine, I understand that I will need to receive the vaccination series from a license health care provider.

Printed Name of Student

Signature of Student, Parent/Guardian

Date

Signature of Witness

Date

Information About Hepatitis B Vaccine

The Disease: Hepatitis B is a viral infection caused by the hepatitis B virus (HBV), which causes death in 1-2% of patients. Most people with hepatitis B recover completely, but approximately 5-10% become chronic carriers of the virus. Most of these people have no symptoms, but can continue to transmit the disease to others. Some may develop chronic active hepatitis and cirrhosis. HBV also appears to be causative factor in the development of liver cancer.

The Vaccine: Hepatitis B vaccine is produced from the plasma of chronic HBV carriers. The vaccine consists of highly purified, formalin-inactivated hepatitis B antigen (viral coating material). It has been extensively tested for safety in chimpanzees and for safety and efficiency in large-scale clinical trials with human subjects. A high percentage of healthy people who receive two doses of vaccine and a booster achieve high levels of surface antibody (anti-HBs) and protection against Hepatitis B. Persons with immune-system abnormalities, such as dialysis patients, have less response to the vaccine/but over half of those receiving it do develop antibodies. Full immunization requires three doses of vaccine over a six-month period, although some persons may not develop immunity even after three doses. There is no evidence that the vaccine has ever caused hepatitis B. However, persons who have been infected with HBV prior to receiving the vaccine may go on to develop clinical hepatitis in spite of immunization. The duration of immunity is unknown at this time.

Possible Vaccine Side Effects: The incidence of side effects is very low. No serious side effects have been reported with the vaccine. A few persons experience tenderness and redness at the site of injection. Low-grade fever may occur. Rash, nausea, joint pain and mild fatigue have also been reported. The possibility exists that more serious side effects may be identified with more extensive use.

Human Subjects for Non-Clinical Scanning:

Policy

Students in the Diagnostic Medical Sonography Program (all tracks) are asked to participate as models in the laboratory sessions for clinical training. The students are not required to participate as models. The student's grades will not be adversely affected should they refuse to participate as clinical models.

Infectious Disease:

Policy:

All students must wear protective devices, gloves, gowns, masks, etc., when performing examinations on patients with infectious disease.

Blood and body secretions such as semen, saliva, urine, tears, stool, emesis, sputum, wound drainage, bile, and pleural or peritoneal fluid may contain the HIV or hepatitis virus. All should be considered infectious. Any tissue, biopsy, or patient specimen should also be handled with care, including wearing gloves.

Procedure:

1. All students must review requisitions for evidence of information regarding necessary precautions.

2. All students will review precautions to be taken with a supervising sonographer/physician before performing an examination on a patient with an infectious disease.
3. Any incidents involving blood or body fluid contamination should be reported to the clinical instructor, physician, and program officials.

Jury Duty:

Policy:

Jury duty is a civic obligation, and it is an individual's responsibility to serve when summoned. However, students called to serve should work with officials to defer service until program completion, whenever possible.

Procedure:

1. Students should report summons to the program director as soon as possible.
2. Program faculty will inform the student of the academic material that needs to be covered. All quizzes and exams will be given to the student to get caught up.
3. Clinical internship missed in most cases cannot be made up. (All absences, regardless of reason, can result in the student becoming ineligible for CCI examination)

Membership in Professional Organizations:

Policy:

Society membership through the American Society of Echocardiography (ASE) is strongly recommended. Meetings sponsored by sonographic organizations are available locally, and attendance is also strongly encouraged. Faculty may request attendance if the subject matter is part of a course being taught. Students with faculty permission may also attend other meetings in the field of ultrasound.

Procedure:

1. Approval for meeting attendance requiring absence should be requested in a timely manner and at least two weeks prior to the scheduled meeting.
2. Faculty will post and provide driving directions to all local meetings showing topics and speakers.

Military Absence:

Policy:

CRMC acknowledges the responsibility of men and women to fulfill service. This policy applies to military absence resulting from service in the United States Armed Forces or in a National Guard or Reserve units.

Procedure:

1. Students should notify the program director of the military status upon acceptance into the program.
2. A reservist may take excused leave time up to 10 days, and a leave of absence for any additional time off required; however the student and program director should attempt to have any non-emergent service deferred until after graduation.
3. Extended time off for reservist duty may result in ineligibility to write CCI boards in the year in which the student graduates.
4. Program faculty will work with the student to complete academic material missed during emergency leave; non-emergency military absence will require the student to receive academic material at the instructor's discretion.
5. Clinical time missed for emergency missed for emergency military absence may be excused if program officials feel the student's clinical internship performance has been adequate.
6. Time off for non-emergency absence may be required to be made up including returning after graduation, if necessary, on a space available basis.

Moral and Ethical Behavior and Cheating Policy:

Policy:

Immoral or unethical behavior will be cause for immediate probation, suspension, or dismissal. The unlawful manufacture, distribution, dispensation, possession, use, sale, disposal, introduction or transfer of drugs, alcohol, narcotics, or any other regulated substance will be grounds for immediate dismissal.

Procedure:

1. Students are expected to use verbal and written language, which does not intentionally demean members of society.
2. Students convicted of any criminal drug statute must notify the program director no later than 5 days after such a conviction. Note: This policy meets the requirements of the Drug-Free Workplace Act of 1988.
3. Sexual misconduct with a patient, staff, or student will result in disciplinary action.
4. You, the student, are expected to conduct yourself with integrity. If you cheat, or aid someone else in cheating, you violate a trust. Cheating includes, but is not limited to copying answers on tests on assignments, glancing at nearby test papers, swapping papers, stealing, plagiarizing, illicitly giving or receiving help on exams or assignments, using pre-marked tests or answer sheets, cribbing, or using texts, notebooks, copying, or any similar means to score an answer sheet. The following actions will be taken against anyone who engages in the above practices:
 - You will receive a grade of zero on the work (exam, assignment, lab, quiz, etc.) where the cheating occurred.

- A report of the Incident Report will also be placed in your file. He/she may file a report in your permanent record or take further disciplinary action such as suspension or expulsion from the program.

Online Grading:

Policy:

The instructor will return graded course assignments to the student within seven calendar days of the assignment due date. If, due to extenuating circumstances, these conditions cannot be met, the instructor will establish an alternative which will be clearly communicated to the students.

Pregnancy:

Policy:

It is the responsibility to notify the program director of the pregnancy.

Procedure:

1. The student must receive written permission from the physician to continue the program.
2. Pregnant students need to be aware that there is a high probability that their didactic year will be extended since required courses are only offered once a year.
3. Pregnant students will not be assigned to a shared diagnostic ultrasound medicine laboratory. A pregnant student may not participate in any ultrasound related study, which is conducted in a fluoroscopy, angiography, or cardiac catheterization room, or perform procedures on patients with radioactive implants.
4. An effort will be made by the program director and the associate faculty to insure that pregnant students are assigned to a “safe” work area. This may result in having to extend the student’s internship as this is on a space available basis.
5. Students need to be aware that the biggest risk to the unborn occurs during the first trimester. Students need to be tested for pregnancy as soon as they feel there is a reason to be so that appropriate adjustments can be made.

Progression & Dismissal (General):

Policy:

The following is the published disciplinary action plan.

Procedure:

The program director may require disciplinary action, including the withdrawal of a student from the program, for a variety of reasons. Immediate dismissal from the program may be indicated, based on the severity of the infraction. Reasons include (but are not limited to) the following:

- Disregard of program rules and regulations
- Unsatisfactory performance
- Insubordination
- Misconduct
- Neglect of duty
- Breach of medical, legal or moral ethics
- Theft of property from the hospital premises or college
- Substance abuse
- Use of, possession of, or intent to deliver controlled substances
- Possession of or use of a firearm on hospital grounds
- Failure to maintain the minimum required passing grade in all course work including clinical practicum
- Breach of confidentiality
- Willful destruction of/or defacement of property
- Willful abuse of/or neglect of a patient, visitor, employee or other persons

Progression & Dismissal (Grades):

Policy:

The program permits only committed students that are confident they will fulfill the entire curriculum to ensure success. All students must earn a minimum academic grade of 2.0 in each course.

Procedure:

1. Students who have a GPA for the course of less than a 2.00 will be dismissed from the program.
2. Other reasons for dismissal: Refer to policies on Moral & Ethical Behavior, Cheating, and Sexual Harassment.

Progression & Dismissal (Clinical Rotation):

Policy:

The program permits only students who can complete the clinical internship requirement. The program requires a minimum clinical internship of 240 hours with a grade of 2.0 or above.

Procedure:

1. Students who earn a B-, C+ or C clinical grade are on probation and are informed regarding areas of weakness.
2. Students earning a B- or less are expected to improve their grade the next course level. They are put on probation until clear improvement is demonstrated.

3. For other reasons for program dismissal refer to policies on Tardiness, Smoking, Moral & Ethical Behavior, and Sexual Harassment.

Sexual Harassment:

Policy:

Mutual respect, consideration, and courtesy are expected of everyone. Students have the right to pursue their education free from all forms of discrimination and conduct which can be considered harassing, coercive, or disruptive including sexual harassment.

Federal and state law prohibits sexual harassment. According to the requirements of both agencies, sexual harassment includes unwelcome sexual advances, requests for sexual favors, sexually motivated physical contact, and other verbal or physical conduct of sexual nature when:

- Submission to such conduct is made, either explicitly or implicitly, a term or condition of an individual's status;
- Submission to or rejection of such conduct by an individual is used as the basis for evaluation affecting such an individual;
- Such conduct is intended to or does interfere with an individual's work or creates an intimidating, hostile, or offensive work environment.

Procedure:

1. It is the responsibility of students who believe they have been harassed to report such behavior so the behavior can be investigated and appropriate action taken.
 1. It is the responsibility of program officials, clinical staffs and faculty to immediately report to appropriate administration or department head any complaint of sexual harassment, which is brought to their attention.
 2. It is the responsibility of the student to report any incidents of harassment they have witnessed or been informed of.
 3. Investigation will be conducted under the aegis of administration responsible for monitoring the behavior of the individual accused of harassment. Investigation will include interviews with all relevant individuals.
 4. Legal counsel, to discuss the findings will be recommended if warranted.
 5. Administration will meet with the concerned student to discuss action.
 6. If the investigation establishes that the alleged conduct did not occur, the complainant must be informed that false sexual harassment claims cannot be made without serious repercussions.
 7. Retaliation against the student who brings charges will not be permitted.
 8. Individuals involved who are dissatisfied with the outcome of action or investigation may appeal through the grievance policy.

Sick Leave:

Policy:

Students enrolled in the Advanced Cardiac Sonography Program should strive to avoid being sick during any of the scheduled Clinical Internship sessions.

Procedure:

1. Students who are sick **MUST** phone the Program Director if they are to miss a scheduled synchronous clinical internship and make arrangements to add additional asynchronous days to make up the absence.
2. It is up to the faculty whether or not students can make up quizzes or tests for absence.
3. Students with children are not allowed to bring their sick children to class.

Smoking:

Policy:

Smoking is prohibited in all medical facilities except in designated outside areas on the CRMC campus.

Procedure:

1. Compliance with all smoking rules is expected.
2. Failure to comply in clinical sites may result in being dismissed from the site.
3. Students also need to be mindful of the odors associated with smoking, and the impact this may have on patients.

Supervision:

Policy:

The Program Director assigned to the student provide general supervision of students during their assigned clinical internship.

Procedure:

1. The Program Director will provide direct supervision of clinical performance in the clinical area. Staff sonographers may also provide direction.
2. Students will be assigned 240 hours or six full weeks of clinical internship to be completed at Community Regional Medical Center. The clinical oversight will be provided by the faculty member assigned to them. Students are expected to share any problems they are having at the time of these visits.

Tardiness:

Policy:

Students are required to be punctual for both didactic and clinical training.

Procedure:

1. Students who are late reporting to their clinical internship are warned once verbally. The second time they are tardy the program director will warn the student again. The third time the student is put on probation, and this may lead to program dismissal.
2. Students are expected to be in the classroom before the start of class. Students who are more than ten minutes late for class may be asked to leave.
3. Quizzes or exams are not lengthened for students who are tardy.

Student Work Policy:

Policy:

It is understood that all Advanced Cardiac Sonography students may be employed in a clinical or non-clinical setting outside regular education hours. This program is designed to accommodate a busy work schedule and still complete this program. The student's responsibility is to ensure that the work does not interfere with assigned clinical and academic responsibilities.

Procedure:

1. Students will not be allowed to be paid for work performed by direction or as part of the **CRMC Advanced Cardiac Sonography Program**.
2. Students who work outside the program and do not maintain satisfactory academic and clinical grades may pay the consequences of poor performance as outlined in the dismissal policy.

COURSE DESCRIPTIONS

Rev. 12/15/19

ACS 001 *Physics and Instrumentation*

Course length: 5 weeks

Course Description: This course will provide an extensive review of Ultrasound Physics and Instrumentation. Topic will include advanced hemodynamics, Doppler equation, spectral analysis and color flow imaging, 3D (TTE and TEE), Harmonics, contrast agents, biological effects, image acquisition and storage, quality control, equipment selection, image optimization, and recent advances in technology and ultrasound techniques.

ACS 002 *Advanced Cardiac Hemodynamics and Pathophysiology*

Course length: 5 weeks

Course Description: This course will provide an extensive review of Cardiac Hemodynamics, Physics, and Doppler principles. Advanced Physics, Instrumentation, and emphasis on flow related principles for image optimization will be reviewed. Cardiac hemodynamic instruction will include review of the cardiac cycle, ventricular function, autonomic nervous system, reflex and humoral control of the circulation, vascular and coronary flow, valvular heart disease and exercise physiology.

ACS 003 *Congenital Cardiovascular Disease*

Course length: 5 weeks

Course Description: Extensive review of both normal anatomy and congenital heart disease will be covered as noted by fetal echocardiography, pediatric echocardiography, and adult congenital echocardiography. Maternal and fetal risk factors, indications for fetal echocardiography, and care from fetal through adulthood will be covered. Topics to be covered include embryology, segmental intracardiac anatomy, cardiac chambers and septation, valve anatomy and dynamics, coronary artery anatomy, conotruncal abnormalities, situs abnormalities, and mediastinal structures.

ACS 004 *Acquired Cardiovascular Disease*

Course length: 5 weeks

Course Description: This course will provide an extensive review of acquired cardiovascular disease including: Valvular heart disease, ischemic heart disease, prosthetic valve disease, pericardial disease, cardiac trauma, cardiac masses, radiation heart disease, and diseases of the aorta.

ACS 005 *Instructional Techniques*

Course length: 5 weeks

Course Description: This course is designed to prepare the learner to present case studies, power point lectures, and facilitate educational sessions at your place of employment. The student will prepare a power point lecture to be presented at an educational session during the clinical internship. Adult learning strategies, empowerment of employees, and educational integration into the echocardiographic laboratory will also be covered. Situational learning will also include scenarios related to department issues, i.e. disruptive behavior, noncompliance, protocol implementation, and quality assurance. Additional instruction in patient historical assessment, physical exam with incorporation of hemodynamic information, and chart review will be covered.

ACS 006 *IAC Accreditation Preparedness*

Course length: 5 weeks

Course Description: This course is designed to either prepare for IAC accreditation or facilitate the maintenance of an IAC accredited echocardiographic laboratory. The facility, staff, and physician compliance will be covered as well as an extensive review of the IAC quality assurance forms. The student will prepare for a mock quality assurance review and will present this during one of the clinical internship visits.

ACS 007 *Cardiovascular Pharmacology*

Course length: 5 weeks

Course Description: This course is a review of the most common pharmacologic agents utilized in the treatment of cardiovascular disease. Topics will include antihypertensives, diuretics, ACE inhibitors, Angiotension Receptor blockers, Calcium channel blockers, Antiarrhythmics, antiplatelet/anticoagulants, chronotropic and Inotropic agents, nitrates, Local anesthetics, prostaglandin, and vasopressors. The didactic component will be accompanied by an onsite Pharmacology instruction by one of our pharmacologists.

ACS 008 *Medical/Surgical Treatment of Cardiovascular Disease*

Course length: 5 weeks

Course Description: This course provides an extensive review of medical and surgical treatment of cardiovascular disease. This course presents a knowledge based approach to student learning. Various disease processes will be assigned to each student. The students will research medical journals, clinical trials, and established methods to discover the latest and most clinically relevant and accepted medical and /or surgical repair for the assigned topics. The student will present the results to the other students and faculty during the group clinical internship. Topics will include prosthetic valves, balloon valvuloplasty, TEE for hemodynamic monitoring, transcatheter aortic valve implantation, mitral repair, closure of prosthetic paravalvular leaks, surgical options in cardiomyopathies, device closures, myocardial biopsies, and other related topics.

ACS 009 *Clinical Trials and IRB Methodology*

Course length: 5 weeks

Course Description: This course is designed to prepare the learner for IRB submission, evaluating clinical trials related to the student's topic of interest, and performing a literature review. CITI training will be completed and a sample IRB application will be completed. Topics will include responsibilities and organization of research, clinical trial design, clinical trial study protocols, research clinical sites, statistical analysis, data handling and management, quality assurance, regulatory consideration, IRB application process, sample size, and subjects training.

ACS 010 *Research Methods and Biostatistics*

Course length: 5 weeks

Course Description: This course is an introduction to research methods and biostatistics. The learner will develop a research question, define the variables, write the code for the analysis, and define the methodology that will best answer the clinical question. Topics will include population surveys, hypothesis testing, outcomes research, randomized vs. nonrandomized methods, blinded, double blinded and nonblinded, simulations, and multiple biostatistical analysis methods of testing variables.

ACS 011 *Advanced Echocardiographic Modalities*

Course length: 5 weeks

Course Description: This course will provide an extensive review of advanced echocardiographic modalities. Topics will include Contrast echocardiography, myocardial perfusion, contrast vascular applications, 3D and 4D imaging techniques, 3D quantification, 3D volume imaging, heart failure assessment, strain imaging, and cardiac resynchronization.

ACS 012 *Comparative Imaging Analysis*

Course length: 5 weeks

Course Description: This course explores the strengths and weaknesses of echocardiography with comparison to other imaging modalities such as x-ray, cardiac catheterization, cardiac MRI, and cardiac nuclear medicine. This course will prepare the learner for the ancillary rotations provided during the clinical internship. Topics include coronary angiography and coronary artery imaging, rest and exercise electrocardiography and echocardiography, nuclear cardiology, MRI, and overall role of complementary imaging modalities in various conditions including CAD, myocardial diseases, valvular heart disease, diseases of the aorta, and congenital heart disease.

ACS 013 *Advanced Cardiac Sonographer Credentialing Exam Review (1-3)*

Course Length: 5 Weeks

Course Description: This course is designed to prepare the learner for the Advanced Cardiac Sonographer credentialing examination. This course will review the entire previous curriculum and provide a mock examination at the completion of the course. The entire ACS curriculum as outlined in Standards and Guidelines document of the Advanced Cardiovascular Sonography (CAAHEP) will be reviewed prior to graduation.

ACS 014 *Advanced Cardiac Sonographer Credentialing Exam Review (1-3)*

Course Length: 5 Weeks

Course Description: This course is designed to prepare the learner for the Advanced Cardiac Sonographer credentialing examination. This course will review the entire previous curriculum and provide a mock examination at the completion of the course. The entire ACS curriculum as outlined in Standards and Guidelines document of the Advanced Cardiovascular Sonography (CAAHEP) will be reviewed prior to graduation.

ACS 015 *Advanced Cardiac Sonographer Credentialing Exam Review (1-3)*

Course Length: 5 Weeks

Course Description: This course is designed to prepare the learner for the Advanced Cardiac Sonographer credentialing examination. This course will review the entire previous curriculum and provide a mock examination at the completion of the course. The entire ACS curriculum as outlined in Standards and Guidelines document of the Advanced Cardiovascular Sonography (CAAHEP) will be reviewed prior to graduation.

ACS CL *Clinical Internship (1-6)*

Course length: 240 hours

Course Description: Three required synchronous weeks with the entire class will be scheduled at Community Regional Medical Center. Week one is orientation and introduction to the program and skills needed to complete the respective online coursework. Week two will be at the six month mark to allow for onsite instruction by the Medical Director and Program Director, required group presentations, advanced echocardiographic techniques, and onsite image critique and analysis education. The last week will be the final clinical competencies and final proctored examination. The three remaining weeks are scheduled in an asynchronous fashion to be arranged between the individual student and the faculty. During these three weeks, the students will have assigned tasks with the sonography students, cardiac sonographers and the UCSF cardiac Fellows. In addition the student will complete ancillary rotations through nuclear medicine, fetal echocardiography, NICU, adult congenital, and cardiac MRI.

ACS IC1 *Image Critique and Analysis 1 (1-6)*

Course length: 25 weeks (two hours per week)

Course Description: The focus of this course is to review a minimum of 250 echocardiographic cases with emphasis on protocol only. The student will apply a given protocol template to the review of these cases as to whether the case, does or does not, adhere to the established protocol. Image

critique is of great importance to the advancement of the cardiac sonographer. This exercise will ensure the learner has a sharp recognition of protocol adherence. The template will be applied to the cases at the student's respective place of employment and will be ongoing. The image critique and analysis will be compared to the final interpretation by the interpreting physician to quantify degree of accuracy. The student will log the hours and cases using a de-identified methodology and will be reported to the faculty. The clinical competency will be tested by the faculty during the onsite clinical internship.

ACS IC2 *Image Critique and Analysis 2 (1-6)*

Course length: 25 weeks (two hours per week)

Course Description: The focus of this course is to review a minimum of 250 echocardiographic cases with emphasis on pathology recognition and reporting. The student will apply a given report template to the review of these cases as either normal or pathology using a systematic approach. Pathology recognition and analysis is of great importance to the advancement of the cardiac sonographer. This exercise will ensure the learner has a sharp recognition of both normal and abnormal cases. The template will be applied to the cases at the student's respective place of employment and will be ongoing. The image critique and analysis will be compared to the final interpretation by the interpreting physician to quantify degree of accuracy. The student will log the hours and cases using a de-identified methodology and will be reported back to the faculty. The clinical competency will be tested by the faculty during the onsite clinical internship.

Advanced Cardiac Sonography Program

ADVANCED CARDIAC CLASS SCHEDULE

Cohort #3 - January 6, 2020 to July 1, 2021

COURSE LEVEL - Number of Weeks Title of Course	Course Number	Start Date	End Date	Times	Day(s)	Lecture Hours	Lab Hours	Clinical Internship Hours
1st COURSE LEVEL - 5 weeks								
Physics and Instrumentation	ACS 001	1/6/2020	2/7/2020	online	online	15		
Adv. Card. Hemodynamics & Patho.	ACS 002	1/6/2020	2/7/2020	online	online	15	5	
Clinical Internship (Synchronous)	ACS CL	2/3/2020	2/7/2020	8am-5pm	M-F			40
Course Level Break - 2/8/2020 to 2/16/20								
2nd COURSE LEVEL - 5 weeks								
Congenital Cardiovascular Disease	ACS 003	2/17/2020	3/20/2020	online	online	15	5	
Image Critique and Analysis 1A	ACS IC	2/17/2020	3/20/2020	online	online		5	
Course Level Break - 3/21/2020 to 3/29/2020								
3rd COURSE LEVEL - 5 weeks								
Acquired Cardiovascular Disease	ACS 004	3/30/2020	5/1/2020	online	online	15	5	
Instructional Techniques	ACS 005	3/30/2020	5/1/2020	online	online	15	5	
Image Critique and Analysis 1B	ACS IC	3/30/2020	5/1/2020	online	online		5	
Clinical Internship (Asynchronous)	ACS CL	TBD	TBD	TBD	TBD			40
Course Level Break - 5/2/2020 to 5/10/2020								
4th COURSE LEVEL - 5 weeks								
IAC Accreditation Preparedness	ACS 006	5/11/2020	6/12/2020	online	online	15	5	
Cardiovascular Pharmacology	ACS 007	5/11/2020	6/12/2020	online	online	15		
Image Critique and Analysis 1C	ACS IC	5/11/2020	6/12/2020	online	online		5	
Course Level Break - 6/13/2020 to 6/21/2020								
5th COURSE LEVEL - 5 weeks								
Med/Surg Treat. of Cardiovas. Disease	ACS 008	6/22/2020	7/24/2020	online	online	15	5	
Image Critique and Analysis 1D	ACS IC	6/22/2020	7/24/2020	online	online		5	
Course Level Break - 7/25/2020 to 8/2/2020								
6th COURSE LEVEL - 5 weeks								
Clinical Trials and IRB Methodology	ACS 009	8/3/2020	9/4/2020	online	online	15	5	
Image Critique and Analysis 1E	ACS IC	8/3/2020	9/4/2020	online	online		5	
Clinical Internship (Synchronous)	ACS CL	8/31/2020	9/4/2020	8am-5pm	M-F			40
Course Level Break - 9/5/2020 to 9/13/2020								

7th COURSE LEVEL - 5 weeks								
Research Methods and Biostatistics	ACS 010	9/14/2020	10/16/2020	online	online	15	5	
Image Critique and Analysis 2A	ACS IC	9/14/2020	10/16/2020	online	online		5	
Clinical Internship (Asynchronous)	ACS-CL	TBD	TBD	TBD	TBD			40
Course Level Break - 10/17/2020 to 10/25/2020								
8th COURSE LEVEL - 5 weeks								
Adv. Echocardiographic Modalities	ACS 011	10/26/2020	11/27/2020	online	online	15	5	
Image Critique and Analysis 2B	ACS IC	10/26/2020	11/27/2020	online	online		5	
Course Level Break - 11/28/2020 to 1/3/2021								
9th COURSE LEVEL - 5 weeks								
Comparative Imaging Analysis	ACS 012	1/4/2021	2/5/2021	online	online	15	5	
Image Critique and Analysis 2C	ACS-IC	1/4/2021	2/5/2021	online	online		5	
Clinical Internship (Asynchronous)	ACS CL	TBD	TBD	TBD	TBD			40
Course Level Break - 2/6/2021 to 2/14/2021								
10th COURSE LEVEL - 5 weeks								
Adv Cardiac Sono Cred. Review 1	ACS 013	2/15/2021	3/19/2021	online	online	15		
Image Critique and Analysis 2D	ACS IC	2/15/2021	3/19/2021	online	online		5	
Course Level Break - 3/20/2021 to 4/4/2021								
11th COURSE LEVEL - 5 weeks								
Adv Cardiac Sono Cred. Review 2	ACS 014	4/5/2021	5/7/2021	online	online	15		
Image Critique and Analysis 2E	ACS IC	4/5/2021	5/7/2021	online	online		5	
Course Level Break - 5/8/2021 to 5/16/2021								
12th COURSE LEVEL - 5 weeks								
Adv Cardiac Sono Cred. Review 3	ACS 015	5/17/2021	6/18/2021	online	online	15		
Course Level Break - 6/19/2021 to 6/27/2021								
FINAL COURSE LEVEL - 1 week								
Final Clinical Internship (Synchronous)	ACS CL	6/28/2021	7/1/2021	8am-5pm	M-F			40
Total Lecture Hours						225		
Total Laboratory Hours							100	
Total Clinical Internship Hours								240