RUSH UNIVERSITY
COLLEGE OF HEALTH SCIENCES

Department of Cardiopulmonary Sciences
Cardiovascular Perfusion Program

Program Handbook
2018-2019

DEPARTMENT FACULTY

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Revised: August, 2018

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Loyola Medical Center 2160 South First Avenue Maywood, Illinois 60153 (708) 216-4209	**Spectrum Health** 100 Michigan Street Grand Rapids, Michigan 49503 (616) 391-1774
Lurie Children's Hospital 225 East Chicago Chicago, Illinois 60611 (312) 227-4000	**St. John Providence Health System** 28000 Dequindre Warren, Michigan 48092 (313) 343-3058
Lutheran Hospital of Indiana 7950 W. Jefferson Blvd. Fort Wayne, Indiana 4680 (260) 435-7001	**St. John's Springfield** 800 E. Carpenter Street Springfield, Illinois 62769 (217) 544-6464
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Mercy Hospital and Medical Center 2525 S. Michigan Avenue Chicago, IL 60616 (312) 567-2000	**Thedacare Regional Medical Center** 1818 N. Meade Street Appleton, Wisconsin 54911 (402) 203-5912
Mosaic Life Center 5325 Faraon St. St. Joseph, Missouri 64506 (816) 271-6000	**University of Cleveland- Harrington** 11100 Euclid Avenue Cleveland, Ohio 44106 (216) 844-2273

RUSH UNIVERSITY
COLLEGE OF HEALTH SCIENCES
CARDIOVASCULAR PERFUSION PROGRAM
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Rush University College of Health Sciences
Department of Cardiopulmonary Sciences
Master of Science in Cardiovascular Perfusion

EDUCATIONAL PHILOSOPHY

The Cardiovascular Perfusion Program prepares professionals with skills to effectively operate as perfusionists within the complex, challenging, and changing health care environment. The learning within the Cardiovascular Perfusion Program is driven by the core beliefs that it is essential for Perfusionist to demonstrate expert problem solving skills, critical thinking skills, positive attitudes toward professional involvement and continuing education and to be adept in the use of evidence based practice. The Cardiovascular Perfusion Program curriculum is based on a comprehensive science foundation, integration of patient care, and fostering clinical decision-making skills. The Cardiovascular Perfusion Program learning experience will instill a commitment to lifelong learning as a means by which graduates can deal with and influence the direction of change in the profession.

The Perfusion Technology program is dedicated to the mission, vision, and values of the College, University, and Medical Center.

MISSION OF RUSH UNIVERSITY MEDICAL CENTER

The mission of Rush is to improve the health of the individuals and diverse communities we serve through the integration of outstanding patient care, education, research and community partnerships.

RUSH UNIVERSITY VISION

Rush will be the leading academic health system in the region and nationally recognized for transforming health care.

COLLEGE OF HEALTH SCIENCES MISSION

The Mission of the College of Health Sciences is to advance the quality and availability of health care through excellence in education, research and scholarship, service and patient care. The college promotes the values of diversity, access and inclusion in all of its endeavors.

COLLEGE OF HEALTH SCIENCES VISION

The College of Health Sciences at Rush University will be a world-class school of allied health sciences whose programs are recognized as among the best in the United States.

DEPARTMENT OF CARDIOPULMONARY SCIENCES
DIVISION OF CARDIOVASCULAR PERFUSION

Mission Statement

The mission of the Cardiovascular Perfusion Program is to prepare competent entry- level perfusionists with the knowledge, skills, and disposition to effectively carry out the responsibilities of the profession. The program provides an experiential learning platform that prepares graduates to act as skillful professionals who demonstrate critical thinking, multi-disciplinary collaboration, research expertise and commitment, professional awareness, and leadership in alignment with the values of Rush University.

Vision Statement

The Cardiovascular Perfusion Program will be recognized as a program providing the highest quality curriculum whose graduates serve as professionals who are innovative, research-driven, experts in the field.

CARDIOVASCULAR PERFUSION PROGRAM GOAL AND OBJECTIVES

Entry level program goals/objectives: Graduates of the program will be prepared to function as a competent entry level practioneer in the cognitive (knowledge), psychomotor (skills) and affective (behavior) learning domains.

Standards:

a. Upon completion of the program, all students will demonstrate the ability to comprehend, apply and evaluate information relevant to the role of the cardiovascular perfusionist.

b. Upon completion of the program, all students will demonstrate technical proficiency in the skills necessary to fulfill the role of a cardiovascular perfusionist.

c. Upon completion of the program, all students will demonstrate personal behaviors consistent with professional and employer expectations for the cardiovascular perfusion practioneer.

In addition to these competency goals, the program seeks to develop graduates who can:

Advance Clinical Practice

- Demonstrate critical thinking to improve patient outcomes.
- Collaborate with multidisciplinary teams in the management of patients requiring mechanical circulatory assist devices.
- Optimize patient care by employing multiple blood management strategies during cardiopulmonary bypass procedures.

Leadership

- Plan, organize, and deliver high quality, cost-effective health care services.
- Commitment to lifelong learning and a strong sense of service.
- Participate in professional organizations.

Teach

- Demonstrate effective clinical education strategies.
- Describe and apply common theories associated with clinical education and behavioral change.

Research

- Formulate appropriate questions, organize and test hypotheses, interpret research results, and summarize findings.
- Critique evidence and apply findings to the practice of cardiovascular perfusion.

Demonstrate Professionalism

- Demonstrate professional spoken and written communication appropriate for the profession.
- Demonstrate ability to work as a team member.
- Demonstrate Rush ICARE values in interactions with patients, students, faculty, and healthcare team.
- Demonstrate confidentiality related to protected health information.

Student Learning Outcomes:

The student learning outcomes are aligned with the 12 required units of learning which align with the standards and guidelines for Perfusion Programs. These learning outcomes provide what learners will be able to know and do as a result of the course of study in the program.

Knowledge:

1. *Demonstrate knowledge and skill in basic science concepts including the following areas of concentration:*

a. Cardiovascular Anatomy

b. Pathology and Surgical Repair

c. Physiology

d. Pharmacology

e. Physics

f. Chemistry

g. Mathematics

h. Immunology

Skills and Experiences:

2. *Apply concepts and skills to effectively use the technology, equipment, and techniques used in cardiopulmonary bypass including skills in applying:*

a. Extracorporeal Circuit Components for Cardiopulmonary Bypass

b. Cardiopulmonary Bypass Techniques

c. Adequacy of Perfusion

d. Myocardial Preservation

e. Systemic Hypothermia

f. Blood Conservation Techniques

g. Special Considerations in Perfusion

h. Catastrophe Management

i. Adjunctive Techniques

j. Patient Monitoring

k. Organ Transplantation

3. *Demonstrate proficiency in Mechanical Assist Techniques including skills in:*

a. Extracorporeal Life Support Techniques

b. Intra-Aortic Balloon Pumping (IABP)

c. Ventricular Assist Devices

Knowledge:

4. *Identify and apply principles of laboratory analysis including analysis in the following areas:*

a. Special Chemistry

b. Blood Chemistry

c. Coagulation

Skills and Experiences:

5. *Apply skills in biomedical engineering as it applies to using:*

a. Biomedical Instrumentation

b. Biophysical Transport Phenomenon

c. Biomedical Electrical Safety

d. Medical and Diagnostic Imaging Technology

6. *Demonstrate skills in managing safety in areas of:*

a. Blood/Fluid Exposure

b. Patient Safety

Patient-Centered Care:

7. *Demonstrate knowledge of continuous quality assurance and CQI for the Perfusionist.*

8. Demonstrate understanding of medical ethics.

9. Understand the historical development of extracorporeal technology.

10. Apply research methods to research in the field.

11. Demonstrate understanding of Business Practice and Regulatory Agencies

12. Apply knowledge of emergency preparedness

ACCREDITATION

The Rush University Perfusion Technology Program is currently on accreditation probation by the Accreditation Committee for Perfusion Education. After graduating from the perfusion program, you will be qualified to sit for the certification examination of the American Board of Cardiovascular Perfusion.

Commission on Accreditation of Allied Health Education Programs
25400 US Highway 19 North Suite 158 Clearwater, FL 33763
Phone: (727) 210-2350

CLASS AND CLINICAL HOURS

The program provides classroom study, laboratory study and observation, clinical experience, independent study, and seminars. Courses are arranged on a set schedule and sequence. Clinical classes in area hospitals meet depending on the corresponding shift assignment, or as specified for specialty rotations. Students are expected to provide their own transportation to clinical training sites. When necessary, the program reserves the right to adjust class schedules, times and program sequencing, to include the possibility of evening classes and clinical, as well as clinical rotations outside of the Chicago metropolitan area.

Program of Study for Cardiovascular Perfusion First Year Fall Semester (17 SH)	Credit Hours
CVP 605 Cardiopulmonary Anatomy and Physiology This course provides an introduction to cardiac and pulmonary anatomy, hemodynamic function and electrophysiology. Students will focus on gas laws and how they apply both to human lung function as well as artificial lung function. In addition, the students will focus on the anatomy and physiology of the human heart and vascular system. Emphasis is placed on the application of these areas as it applies to cardiovascular surgery and perfusion technology.	**3 SH**
CHS 601 Introduction to Biostatistics ----- IP Course This course focuses on concepts and procedures for using descriptive and inferential statistics. Differences between parametric and non-parametric statistical tests will be emphasized. This course is predominantly an application based course incorporating the use of computerized statistical programs such as SPSS.	**2 SH**
CVP 611 Cardiovascular Perfusion Technology I This course introduces the perfusion student to the historical development of both cardiac surgery and perfusion technology. In addition, the students will learn about the basic components of the heart lung machine and their principles of function. Students will also learn the principles of aseptic technique as practiced in the operating rooms and related departments of the hospital.	**3 SH**
CVP 612 Instrumentation in Cardiovascular Perfusion This course introduces the student to the various types of electronic monitoring equipment required for open heart surgery and related procedures. Instructional design includes didactic presentation of operational theory with practical operating room experience, simulated scenarios and laboratory study. Topics of study include electrical circuitry, pressure transducers, thermistors, cardiac output devices, fluid dynamics and physiologic monitoring devices.	**3 SH**
CVP 620 Evaluation of the Cardiac Surgery Patient This course introduces the basic diagnostic principles involved in determining the nature and extent of the disease necessitating surgical intervention. Factors that are important in determining perioperative morbidity and intraoperative perfusion management (e.g. patient medical history, laboratory results, diagnostic tests, etc.) will be discussed. Course work will include class time and observations within the clinical arena.	**3 SH**
CVP 621 Seminar I This course is designed to give students a basic understanding of medical terminology, aseptic technique, patient safety issues, professionalism and medical ethics. Students will be introduced to ethical principles often encountered in the health professions.	**3 SH**

Program of Study for Cardiovascular Perfusion First Year Summer Semester (14 SH)	Credit Hours

Program of Study for Cardiovascular Perfusion First Year Spring Semester (15 SH)	Credit Hours
CVP 606 Acid Base Physiology This course provides the perfusion student with a comprehensive review of the structural, functional, and integrative aspects of the kidney and urinary system. The course will focus on theory, application, and interpretation of blood gas analysis and associated clinical cardiopulmonary physiologic mechanisms that underpin renal function. ***Pre-Requisite: CVP 605***	**2 SH**
CVP 615 Cardiovascular Perfusion Technology II This course will focus on adult cardiac and thoraco-aortic surgery. Lectures will focus on acquired adult cardiac and aortic disease states and appropriate equipment, circuits and ancillary equipment used by the perfusionist. Students will practice perfusion setups and provide presentations on current perfusion practices related to adult cardiac diseases. ***Pre-Requisite: CVP 611 & CVP 612***	**3 SH**
CVP 622 Pathophysiology and Perfusion Techniques This course is designed to provide the perfusion student with an opportunity to explore the association of anatomy, physiology and pathophysiology and the application of perfusion practice. The course will provide the detailed foundation and skills necessary to understand the interplay between the science of extracorporeal technology and the pathophysiologic considerations. Identifying and applying these principles in a systematic and integrated manner is required for evidence-based clinical practice. ***Pre-Requisite: CVP 611 & CVP 612***	**5 SH**
CVP 632 Principles of Pharmacology Students will learn the fundamental principles and concepts of pharmacology. Discussions will focus on the principles of drug absorption, distribution, and metabolism; drug receptor activities, and the therapeutic uses and mechanism of action of drugs in each major drug group. ***Pre-Requisite: CVP 620***	**3 SH**
CHS 610 Research Methods This course provides an introduction to basic, clinical, and translational research methods. It emphasizes the development of skills to enable the health science student evaluate research articles and participate in clinical research activities. Quantitative research designs, sampling techniques, measurement, and interpretation of common statistical findings are also reviewed. Principles of evidence-based practice are incorporated.	**2 SH**

CVP 623 Adult and Pediatric Congenital Heart Disease This course introduces the student to the cardiovascular physiology, pathophysiology and anatomical differences associated with pediatric and adult congenital heart patients. Through lectures and discussion, the students will be prepared to understand these defects as well as how a Perfusionist manages the heart lung machine during these complex congenital procedures. ***Pre-Requisite: CVP 605***	**2 SH**
CVP 624 Mechanical Circulatory Support This course introduces the student to the advance practice guidelines for the care of patients treated with cardiac assist devices. Device selection based on patient issues, implantation, operation, and monitoring of various devices will be discussed. These devices, including cell savers, ventricular assist devices, extracorporeal membrane oxygenation, balloon pumps, etc. will be reviewed to give the students an understanding of the devices they will be encountering in the field. ***Pre-Requisite: CVP 622***	**2SH**
CVP 640 Principles and Practices of Cardiopulmonary Bypass with Simulation This course prepares the student for their perfusion practicum courses. The principles of extracorporeal circulation will be presented in lecture and applied during simulation and laboratory experiences. Students will prepare specific care plans for patient bypass procedures. Performance standards evaluated include: pre-bypass assessment of the patient's hemodynamics and readiness for bypass, the institution and management of cardiopulmonary bypass, anticoagulation status, system and patient monitoring, as well as procedural awareness. Each experience will conclude with a de-briefing to allow progress thru the stages of learning. ***Pre-Requisite: CVP 622***	**4 SH**
CVP 641 Perfusion Practicum I This is the first clinical rotation the student will have during their course of study. The students will continue to review the diagnostic work up procedures and apply their knowledge to develop a perfusion management plan for the patient undergoing cardiac surgery. The student will begin to assist in the operation and management plan for the patient. During this rotation students will be tested on competencies required to prepare them for perfusion practicum II through simulation, oral exams and a written exam. ***Pre-Requisite: CVP 622 & CVP 632***	**4 SH**
CVP 661 Master's Project I The purpose of this course is to provide the perfusion student with the ability to perform research. The student will be introduced to the concepts of the IRB approval process and learn how to complete a literature review, collect data, complete a statistical analysis, and write a final paper on their research as *a*pplicable to their projects. In the CVP 661-662-663 course series, students will complete a research project. ***Pre-Requisite: CHS 601 & CHS 610***	**2 SH**

Program of Study for Cardiovascular Perfusion Second Year Fall Semester (16 SH)	**Credit Hours**

CVP 662 Master's Project II The goal of this course is to integrate qualitative methods with perfusion technology knowledge and skills to test a hypothesis that addresses a current issue that is important to management of perfusion technology related to health care. ***Pre-Requisite: CHS 601 & CHS 610 & CVP 661***	**2SH**
CVP 642 Perfusion Practicum II This is the second clinical practicum experience for the student. Each course builds on the skills in the previous clinical and didactic courses. The overarching goal of the practicum series is that the student shows steady progression towards the goal of independent practice while under the watchful eye of the clinical instructor. ***Pre-Requisite: CVP 641***	**12SH**
CVP 680 Organizational Leadership The Organizational Leadership class will focus on the tools and strategies necessary to become an effective leader. While the focus will be on how these strategies can be used within a large or small perfusion group their origin is based in effective management and leadership within any organization of any size. Upon completion of this class the student will have been exposed to the leadership skills that will prepare them as a future leader in the profession.	**2SH**
Program of Study for Cardiovascular Perfusion Second Year Spring Semester (16 SH)	**Credit Hours**
CVP 664 Masters Project III This course will focus on completion of the research project for satisfaction of the graduation requirement. The student will be required to present the progress and findings of their research. ***Pre-Requisite: CHS 601 & CHS 610 & CVP 661 & CVP 662***	**2SH**
CVP 645 Perfusion Practicum III The principal goal of this final practicum experience is that the student will be capable of performing perfusion related duties supervised, but without instructor intervention. ***Pre-Requisite: CVP 641 & CVP 642***	**12SH**
CVP 681 Health Care Quality & Operations Management The Health Care Quality & Operations Management class is designed to expose the student to principles that foster continuous improvement within an organization through Continuous Quality Improvements (QCI) and Quality Assurance (QA) initiatives. QA has become a mandatory component of every profession in the business of delivering patient healthcare and it is critical that all future leaders have been exposed to these principles. Upon completion of this course the student will have a solid understanding of how to insure evidence based medicine is being delivered. ***Pre-Requisite: CVP 680***	**2SH**
Total Hours = 78 Didactic Hours = 46 Simulation and Practicum Hours = 32	

DAYS OFF AND ABSENCES

Class attendance is essential to achieve the terminal goals of the program. Class and clinical absences must be reported to the Program Director thru email, clinical absences must be reported to the Clinical Coordinator thru email also, or a delegated person prior to the absence.

Students will be granted 5 clinical days off during the clinical year for the purpose of interviews. Students are required to notify the Program Director of their intention to use clinical day(s). The notification has to be in writing (email will count), and should be done at least two weeks prior to taking the days off. In the event of emergency illnesses, students must notify the Program Director as soon as possible of the need for day(s) off. Students will provide documentation of the illness as soon as possible. This documentation must come from an acceptable source (a signed note from a physician). If the student cannot provide documentation, the student will forfeit two days of clinical days off for every one day that the student is absent.

Sick time will be deducted from the allotted clinical days off. If a student finds it necessary to take more than the allotted time off during the clinical semesters, they will be required to make up time during breaks or at the end of the final semester. Make up time must be scheduled with the Program Director in advance.

Call

Since the goal by the end of the program is for students to function fully as members of the perfusion team, call is an essential part of that training; thus students may on call at their clinical rotations.

Clinical Rotations

The CVP Program is fortunate to have excellent clinical rotations throughout the US. **All students are required to rotate to some locations outside of the Chicago area and/or to out of state.** All costs associated with these rotations are the responsibility of the student. In addition to the rules and guidelines set forth in this handbook, students must follow any additional rules and regulations required by the clinical affiliate.

COMPREHENSIVE END-OF-PROGRAM COMPETENCY ASSESSMENT EXAMINATION

Pre-Clinical Exam

Prior to their clinical rotations students will be administered a written pre-clinical exam. They must receive at least a 70% on this exam to prior to the start of clinical rotations. Students failing to score 70% or greater on the exam will receive remediation and retest prior to the start of the clinical rotation. Students not meeting

the minimum requirement after the retest will be placed on academic probation and will not advance to clinical rotations until the completion of an individual remediation plan.

Comprehensive Exams

Three comprehensive exams are taken during the clinical year. One is taken at the beginning of the third semester, one at the end of the third semester and one just prior to graduation. The goals of these tests are to prepare students for the national certifying exam. Each exam consists of questions similar to the board exams with a time limit. Note paper is supplied and students will only be allowed to bring a non-graphing calculator and writing utensils. Exams are graded and numerical scores are provided shortly after submission. The Program Director and Clinical Coordinator reviews each test and provides students with areas that need additional concentration.

Conduct & Ethics

Professional behavior is expected at all times. Professional attire and appearance is also required at all times. Students will have at least one long white lab coat with the RUSH logo (can be purchased from bookstore). Students must display RUSH identification badges at all times.

Professionalism: During your clinical education you not only perfect techniques and gain knowledge in clinical perfusion science, but you also develop a professional demeanor that will affect much of your public and private careers. We hope these descriptions will help you understand the areas in which you should show growth this year.

Attitude: In order to perform our job well, we must feel good about the work that we do. Our attitude is reflected in the amount of sincere interest and enthusiasm we outwardly express for our job responsibilities, including both assigned and unassigned tasks.

Attendance/Punctuality: To continue smooth service in a busy work environment, we should always arrive early or on time and begin our work promptly. Whenever we need to be gone, we have to be sure that our supervisors know that our work is completed in our absence.

Dependability: As perfusionists, physicians and patients depend on us to provide our services efficiently. A patient's life may depend on our ability to meet our on-call obligations. We have to be able to step in where others leave off and work with little or no supervision. We must show we have the expertise to perform as expected, but also recognize our limitations.

Organization: To complete the work load efficiently, most technologists use advance planning and set priorities to organize their tasks and set them up systemically so that another Perfusionist could

complete the procedures should an emergency arise. In addition, we use our spare time for cleaning, working on projects or reading scientific journals.

Attention to Detail: Patient's lives depend on us performing our tasks accurately and following all standard operating procedures. We must always record and evaluate patient and quality control data. We are continually working to meet deadlines and completing our assigned workload. In addition, we have to follow all safety procedures and perform preventive maintenance regularly.

Error Recognition and Correction: Perfusionists rely on their technical expertise to recognize and correct mistakes. It is accomplished by reviewing equipment set-up and performance prior to patient contact. We are compelled to possess the integrity to report errors to the appropriate official in the best interest of patient care.

Interpersonal Skills: Part of being a professional is getting along well and communicating effectively with others. As perfusionists, we work with other health care professionals and patients. It is essential that we function cooperatively as members of the health care team. Personality conflicts must not prevent us from putting forth our best efforts.

Self-confidence: The workload is completed more smoothly if we approach it with self-confidence, by organizing our individual tasks, by interacting with our peers and by maintaining our composure during times of stress. At times we all must accept some constructive criticism and modify our behavior.

Problem Solving: Not all workloads can be completed without problems occurring. We have to always keep our mind on what is happening so that we can perceive any errors or equipment malfunction and then take corrective actions. To do this, we have to know the purpose of each step of a procedure and equipment operation.

Compliance with Rules and Regulations: Surely, we all value our freedom and independence. However, as professionals we are compelled to understand the necessity and significance of rules and regulations. Generally, they are formulated for the benefit of all: Our patients, our colleagues, and ourselves. Their purpose may involve safety, accuracy, efficiency and/or factors important to the welfare of patients and staff. Adherence to rules and regulations is expected of professionals.

Scholastic Dishonesty & Cheating

Academic dishonesty is defined by the Cardiovascular Perfusion Program as:

- Unauthorized possession of materials used by faculty in determining a grade. This may include but is not limited to examinations, quizzes and study questions. Each faculty member is responsible for

determining what constitutes authorized materials and for disseminating this information to the students.

- Use of unauthorized aids during an examination.
- Providing unauthorized assistance to another student during an examination.
- Asking for assistance from another student during an examination.
- Any and all forms of dishonesty in perfusion/patient records.
- Any and all forms of plagiarism.
- Any and all forms of deliberate deception.
- **Any and all forms of plagiarism**

Plagiarism

Any work written by another person, quoted or not, must be cited. Refer to Instructions for Authors in The Journal of Extracorporeal Technology for proper citation format. Plagiarism is a serious academic offense and can be grounds for dismissal from the Cardiovascular Perfusion program.

Examination Administration

All examinations given by the department will be monitored by faculty or staff at all times. Students will be seated in such a manner as to minimize the opportunity for observation of other students' examination papers. No breaks will be allowed once an examination period has begun, and students may not leave the room during an exam until they are finished taking the examination, except in the event of an emergency, which will be judged by the faculty or staff monitoring the exam on a case by case basis.

If a student turns in an examination without answering all questions, he or she will NOT be given an opportunity to finish the examination after leaving the room. Only marks made on the Scantron sheet will be used to compute a grade on all Scantron-graded examinations. Even if a student marks the answer correctly on his or her examination, but does not mark it correctly on the Scantron, only the Scantron answer will be used to compute the grade, not the answer marked on the examination.

Calculators will be provided to students for examinations, thus personal calculators will not be allowed during examinations.

Examination Review

At the discretion of the course instructor, during review of any examination given within the curriculum, no other papers or books will be allowed on the student's desk. No writing implements of any kind will be

allowed. NO note taking or recording of any kind will be permitted. This includes written note taking, and/or recording with audiotape, videotape, or any other form of electronic or mechanical recording. Violation of this policy will constitute academic dishonesty and will be referred to the Committee on Progress and Promotions for review and possible disciplinary action.

COLLEGE OF HEALTH SCIENCES/ PERFUSION TECHNOLOGY PROGRAM STUDENT ACADEMIC APPEAL AND GRIEVANCE PROCEDURES

The College of Health Sciences student appeals and grievance procedures provide a mechanism whereby any student may obtain a review of a complaint of unfair treatment. The student appeals procedures shall not be used to question a rule, procedure or policy established by an authorized faculty or administrative body. Rather it shall be used to provide due process for those who believe that a rule, procedure or policy has been applied in an unfair or inequitable manner, or that there has been unfair or improper treatment by a person or persons. Students who are appealing an academic decision that could result in a dismissal from the university may be allowed to continue to progress in the program until the issue is resolved. If the academic decision is upheld and the student is dismissed from the university they will be withdrawn from their current classes. This withdrawal will be backdated to before the beginning of the quarter and the student will receive 100 percent tuition reimbursement for that quarter.

A student wishing to appeal an academic decision should follow the process summarized below, in the sequence indicated.

Step 1. In the academic community, the responsibility for course development, course delivery, and the assessment of student achievement rests primarily with each course instructor. Any student who has a complaint of inappropriate treatment related to a course should first seek to resolve it informally with the course instructor. If the course instructor is the department chairperson, or if the complaint does not pertain to a specific course, the student should seek resolution with the department chairperson at the outset.

A) A student with such a complaint must request reconsideration, in writing, of the application of a rule, procedure, or policy or unfair or improper treatment within five working days following the incident that forms the basis for the complaint (e.g., five days after grades are posted).

B) The instructor will meet with the student (or speak with the student *via* telephone for those students who are unable to come to the instructor's office if so requested by the student). The instructor will notify

the student in writing of his/her decision regarding the complaint within five working days following the meeting or discussion.

Step 2. If resolution is not achieved informally, as described in Step 1, the student should seek resolution with the chairperson of the department in which the course is offered within five working days following notification by the instructor of his/her decision.

A) The chairperson will meet with the student (or speak with the student for those students unable to come to the chairperson's office if so requested by the student) following receipt of the student's request for resolution to discuss the problem or complaint.

B) The chairperson will notify the student of his/her decision in writing following the meeting or discussion.

Step 3. If the issue was not resolved in Step 2 the student may submit a written appeal, describing the nature of the student's complaint and reasons for seeking an appeal to the student progress and promotion committee of the department within five working days following notification by the department chairperson of his/her decision.

A) The student may appear before the committee in person, make an oral statement and answer questions from the committee. The student will not be allowed to be present during committee deliberations.

B) The committee may request that the course instructor or faculty member named in the grievance appear before the committee to make an oral statement and answer questions. The instructor or faculty member named in the grievance may not be present during committee deliberations.

C) Following review of information provided, the committee will notify the student of its decision.

Step 4. If the issue was not resolved to the students' satisfaction in Step 3 the student may submit a written request seeking a hearing to the Dean within five working days of receiving the department progress and promotion committee decision. The written request should include a description of the complaint and the reason the student is seeking an appeal.

A) The Dean will meet with the student following receipt of the written request from the student for a hearing.

B) Following the meeting with the student, the Dean may render a decision, or choose to appoint a panel to investigate the grievance and make a recommendation to the Dean.

C) Following review of the information provided and any recommendations from the panel, should one be appointed, the Dean will then notify the student of his/her decision. The decision of the Dean shall be final.

Appeals Process

A student wishing to appeal an academic decision should follow the process summarized below, in the sequence indicated:

- First: Discuss and attempt to resolve the issue with the course director, lecturer or faculty member.
- Second: Appeal the decision (in writing) to the chairperson within 5 working days following notification by the course director/instructor
- Third: Submit a written request of appeal to the Department's Student Progress and Promotion Committee within 5 working days of the chairperson's decision
- Fourth: Submit a written request seeking a hearing to the Dean within five working days of receiving the department progress and promotion committee decision
- The decision of the Dean will be final

Conduct in Clinical Facilities

In the event of a student disciplinary problem in a clinical facility, such as unprofessional conduct, the following procedure will be adhered to:

1. The student will be dismissed from the clinical facility by the instructor, and the time will be recorded as an unexcused absence.

2. The student will be scheduled for a formal counseling session conducted by the instructor and the Clinical coordinator from the CVP program, at which time his/her clinical status will be reviewed and appropriate action taken. The student must complete this counseling session in order to be readmitted to the clinical rotation.

3. The program attendance policy remains applicable.

RUSH UNIVERSITY – CARDIOVASCULAR PERFUSION PROGRAM COLLEGE OF HEALTH SCIENCES: HIPAA AND PATIENT PRIVACY

The Cardiovascular Perfusion Program at Rush takes HIPAA and the privacy of our patients very seriously. Students are expected to actively apply and enforce these protections during all program activity. This

applies not only to clinical rotations, but also to homework activities, OR observations, and research projects. Both students and clinical affiliates are encouraged to express any questions or concerns to the program's Clinical Coordinator or Program Director.

The official policy of the Rush College of Health Sciences is stated below:

"As a student at Rush University, you have a legal and ethical responsibility to safeguard the privacy of all patients and protect confidentiality and security of all health information. Protecting the confidentiality of patient information means protecting it from unauthorized use or disclosure in any format - verbal, fax, written or electronic/computer. Patient confidentiality is a central obligation of patient care. Any breaches in patient confidentiality or privacy may result in disciplinary action, up to and including dismissal from the college."

The laboratory component of some courses may use students as simulated patients. This is particularly true for the patient evaluation, medicine and patient education components. Additionally, the sharing of personal experiences can be a rich resource in the development of students understanding, knowledge and appreciation of disease, health care and impact on peoples' lives.

Practicing the medical history and physical examination places students in close contact and leads to the sharing of personal information and physical findings. Similarly students may use personal experiences in patient role-playing exercises.

All shared and personal medical information and physical examination findings are to be treated with utmost confidentiality, the same as for any patient contact. Failure to protect the confidentiality of any information related to the activities in a course or clinical rotation may result in disciplinary action, up to and including suspension or dismissal from the college.

For additional information, students should refer to the Rush University HIPAA policy and the Rush University Policy on Privacy and Confidentiality of Student Records and FERPA.

Guide to Professional Conduct

(SEE APPENDIX B; PAGE 59)

Procedure for Unprofessional Conduct

The following guidelines will be followed for unprofessional conduct:

Step 1. The student will have been identified as violating an established standard of professional conduct/judgment or moral/ethical behavior, and the department chair or program director will have been notified.

Step 2. The program director will meet with the individual making the allegation and the student's faculty advisor to review the available information and determine the veracity of the allegations.

Step 3. The program director, student, and faculty advisor, whenever possible, will meet as promptly as possible after the alleged incident. The department chair will report to the student the facts and available information and will seek to authenticate or clarify the allegations where possible. If it is determined that there is no basis for the allegation, no further action will be taken.

Step 4. If it is determined that there is a basis for the allegation and that further investigation is necessary, a preliminary hearing of the departmental Committee of Progress and Promotions will be convened to review the allegations and recommend a course of action. The department chair will inform the student and the dean in writing of the preliminary hearing and the following:

1. Date
2. Name of student
3. Nature of the allegations
4. Date of alleged incident/occurrence
5. Professional attributes that allegedly violate standards: Skill, behavior, judgment, ethical values, etc.

Incidents in the Clinical Agency

An incident occurring which affects patient or staff well-being or the patient's prescribed care will be reported to the clinical instructor immediately. A hospital incident report will then be completed following the policy of that institution. A duplicate of the hospital incident report as well as a memorandum of explanation from the clinical instructor will be placed in the student's clinical file and the department chair/program director or director of clinical education will be notified immediately. Incidents involving gross errors in judgment or practice on the part of the student will constitute grounds for dismissal from the program.

Procedure for readmission to the Cardiovascular Perfusion Program

Any student who has withdrawn from a program or has not been enrolled for one or more semesters or any dismissed student may apply for readmission by submitting an application for this purpose. Applications for re-enrollment must be received at least three months before the planned return. An

interview may be required. A re-entering student must meet the conditions for re-enrollment stated in his or her dismissal or re-entry acceptance letter and all policies, requirements and course sequences in effect at the time of re-entry. Previously enrolled students may be considered as part of the pool of new applicants and are not guaranteed admission. The student will pay tuition and fees at the rates in effect at the time of re-enrollment.

Change of Address Responsibility

It is the responsibility of any student enrolled in the Cardiovascular Perfusion Program to inform both the Office of the Registrar and the department of any change of address or phone number.

Correspondence between Students and Faculty

1. A schedule of office hours will be noted in each faculty member's course syllabus.
2. Students will be assigned to a faculty advisor in the fall semester of their first year. Times for student conferences will be posted.
3. Each student must meet with his advisor formally at least once per semester during the academic year. One advisement session will be held during each summer session.
4. A student conference record will be completed and signed by both the faculty member and student following a formal conference.

Release of Student Information

Students must sign a release form requesting letters of reference for employment, enrollment verification, etc. Additional forms are available in the Department.

Student grades cannot be given out over the telephone.

Uniform Policy for Clinical Practice

1. Professional attire and appearance is required at all times. Students must have one white lab coat with the RUSH logo. Students must display their RUSH identification badges at all times. If a facility requires the students to wear an I.D. from their facility, the students will only need to wear the facility I.D.
2. The trunk region (midriff sections) should be covered at all times. This includes classroom and clinical situations. For example, sequins, leather leggings and tops with shoulders cut outs are not appropriate attire.

3. Clinical attire applies to dress to be worn during clinical work or during visits to different clinical settings. The students are responsible for contacting their clinical instructors in advance for any other dress requirements that the clinic might have (lab coats, scrubs, etc.)
4. Failure to comply with the dress code may result in verbal and written warnings. Repeated failure to adhere to professional appearance of the clinical site may result in dismissal from the clinic.

Due to the disruptive nature of cell phones and pagers, all cell phones and pagers must be turned off or kept in the silent/quiet mode during all class periods, exams, and during all patient care times.

BACKGROUND TO CLINICAL EDUCATION CARDIOVASCULAR PERFUSION PROGRAM RUSH UNIVERSITY

The Perfusion Practicum (PP) courses represent the clinical portion of the Cardiovascular Perfusion Program at Rush University. The course series starts in the summer semester preceding the second year and continues until graduation at the end of spring semester. Students engage in coursework that offers an ongoing three phase approach of (1) content knowledge, (2) clinical experience, and (3) seminar application. Thus, students are "experiencing" learning within a safe and supportive environment. Students gain valuable skill and expertise with the guidance of skilled practitioner faculty. In these courses, the students obtain clinical experience and competencies in all aspects of cardiovascular perfusion. Each clinical course builds on the skills developed in previous clinical and didactic courses. The principal goal of the final perfusion practicum is that the student will be capable of performing all perfusion related duties supervised, but without instructor intervention.

Philosophy of Clinical Education

The Cardiovascular Perfusion Program's objective is to help students acquire the knowledge and skills of their discipline through the in-depth academic content, sequential structured clinical education experiences, and learning assignments. The clinical education component is viewed as a dynamic process where students participate actively in learning to apply academic information to clinical practice. The goal of all learning experiences is to instill a commitment to lifelong learning as a means by which graduates of the program can deal with and influence the direction of change in the profession.

Student Role in Clinical Education

During the transition from didactic education to the primary phase of clinical education, it is important for all students to understand that they are responsible for their own learning. The Perfusion faculty and staff are here to facilitate successful completion of all degree, clinical, and professional

requirements. In clinical education, students must focus on understanding why and how, ask questions of their clinical instructors, and incorporate content from didactic courses to clinical practice. Students need to refine their self-evaluation skills so they have heightened awareness of what they know, what they don't know, and strategies for obtaining information and developing clinical skills needed. The goal should be to acquire the knowledge and skills to enable independent and successful entry level practitioner in the science of cardiovascular perfusion. When having difficulties transitioning from the classroom to the focus of clinical practice, it is imperative to immediately contact the appropriate clinical coordinator to discuss the concerns. Early discussion can prevent later difficulties. Students are also encouraged to communicate with their academic advisors regarding any aspect of their clinical experiences.

Development & Measurement of Clinical Skills

The basic areas of clinical education focus on facilitating the acquisition of knowledge, skills, and professional attributes needed for professional practice. While participating in clinical practicums, students gain valuable skills and expertise with the guidance of accomplished practitioner faculty. The primary focus is on patient safety and quality of care. See ***(Appendix A; PAGE 49)*** for the established standards used to assess clinical skills demonstrated during the clinical experience courses. It is imperative to understand there is no mechanism for remediation for failure of the clinical courses. Students who fail to receive a passing grade on any of the Perfusion Practicum courses (Clinical Rotations) may be dismissed from the program. The responsibility for final grades for all perfusion practicum courses lies with the Program Director and Clinical Coordinator of the perfusion program. Failure to meet competency levels may result in failure of the entire course. Failure to complete a clinical rotation because of dismissal from the site for clinical incompetency, unprofessional behavior, or any other reason constitutes failure of that clinical rotation. Students who fail to complete a rotation, may, at the discretion of the course director and program director, be required to complete a rotation at a different site of the director's choosing and site availability to accept another student. This site may be an out of town site. If a student fails to complete a rotation, that student will, at a minimum, be placed on academic probation pending the end of rotation evaluation.

Feedback on Clinical Performance

The purpose of clinical feedback is to monitor progress towards attainment of clinical competencies. Scores from the clinical evaluation provide a continuous record of student performance and allow students to track their progress on meeting the published standards of the Cardiovascular Perfusion Program and the Accreditation Committee on Perfusion Education.

Formative Assessment of Clinical Competency

In addition to documentation of hours and case summaries, daily evaluations will be completed and managed thru Medatrax (an advanced medical education informatics and data tracking system). Additionally, assessment measures will be completed at midterm and end of term for each of the perfusion practicum courses. Mid-term grading provides a mechanism for identifying student strengths and areas to improve. They also provide a structure for setting up learning goals for the remainder of the term. A student's actual grade for the term is based on performance at the end of the rotation as measured across the last 4-5 weeks. Students receiving a failing grade at the mid-term evaluation will be required to develop a clinical remediation plan with the clinical coordinator at the site to help the student work towards improving areas of concern. The remediation plan must be submitted to the program's clinical coordinator for final approval. Students wishing to appeal the failure of a Perfusion Practicum series course should follow the policy for course appeals.

To schedule a Medatrax in-service for your site, please contact: Webmaster@medatrax.com

Also, please send a listing of all clinical instructors with their email address to Webmaster@medatrax.com so they can be added to the database.

Grading Guidelines for Perfusion Practicum Courses II-III

CVP 642 and CVP 645

Practicum Scoring Rubric		
Points	Student Clinical Performance	Clinical Instructor Support
0	Critical error that could have harmed the patient.	INSTRUCTOR REMOVES STUDENT FROM THE CLINICAL CASE - due to an extreme error that would have cause harm without intervention, the student receives a failing grade for that case.
1	ABSENT SKILL - or implemented with difficulty. Demonstrates incomplete understanding of the clinical process.	MAXIMUM INSTRUCTION - Background information and demonstration necessary all or most of the time. Clinical process is provided by clinical instructor.
2	EMERGING SKILL - needs instruction to modify skill, implements skill if previously discussed /observed.	CONSTANT DIRECTION - Helps students understand or complete the task. Much assistance is needed with subsequent task completion.
3	CONSISTENT W/ OCCASIONAL PROMPTS - Skill is implemented appropriately most of the time, working on refinement of techniques.	INTERMITTENT PROMPTING – Occasional input is required to insure accurate, appropriate or optimal techniques are implemented.

4	CONSISTENT AND CAPABLE – in most situations is able to implement the skill consistently and proficiently, demonstrates independent clinical problem solving.	REGULAR OVERSIGHT- Able to confirm students plans/actions most of the time, Collaborates with the student regarding patient needs, Promotes student independence.
5	EXCEPTIONAL – Skills /techniques implemented independently and competently. Takes initiative in case management.	COLLABORATIVE INPUT – Provides input when student indicates assistance is needed in a specific area, plays the role of advisor, provides mentoring to support growth.

0 = Critical Error 1= Absent skill 2= Emerging Skill

3= Inconsistent Skill 4= Consistent and capable 5= Exceptional and independent

The total number of categories graded is calculated and it is expected that as the rotation progresses the student will receive a higher % of graded categories. The total number of categories graded is calculated and it is expected that as the rotation progresses the student will receive a higher % of graded categories.

Each section is graded on a scale of 0-5 as noted above.

Grading Guidelines for Perfusion Practicum Courses II-III –cont.

Patient Work up (10%)

- Obtains complete and accurate history, able to identify important findings, shows knowledge of major and minor issues. Has essential data for history and physical, is well organized, clinical problems are well defined, understands impact of abnormal findings, and summarize or explains clinical data. Independently identifies and explains pathophysiological concepts related to defect. **(1-5)**
- Demonstrates a good understanding of drugs used during CPB procedures. Able to discuss indications and contraindications of commonly used cardiac drugs. Is capable of consistently selecting appropriate drugs and dosages even in unfamiliar situations. Uses appropriate consultation with instructor prior to administration of drugs into the ECC. **(1-5)**
- Able to independently describe operation required, exhibits knowledge of surgeon, anesthesia and perfusion protocols. Perfusion care plan reflects comprehensive understanding of the patient requirements **(1-5)**
- Able to calculate needed parameters with accuracy and in a timely manner. Can explain significance of values. Able to recite drug dosages. **(1-5)**

Preparation of Circuit (20%)

- Consistently is aware of sterile technique and performs duties without compromising sterility. **(1-5)**
- Able to differentiate between circuit components required, discusses best option for selection, and exhibits good judgment for final selection. Articulates performance characteristics of circuit components **(1-5**)
- Is prepared for circuit set-up, has all supplies available and works efficiently. Routinely checks equipment/disposables for sterility and good function prior to set-up, reports that set up was completed with appropriate attention to sterility and observation of component integrity. Performs set up in logical organized fashion, able to complete setup within 15minutes continually progressing toward faster set-up times. Primes and De-bubbling circuit independently. **(1-5)**
- Completes Pre-bypass Checklist accurately and completely within required time, no omission or inaccurate reporting of items. **(1-5)**

Initiation of Bypass (10%)

- Demonstrates ability to initiate CPB within the time expected by surgical team and is able to do so without considerable change in patient status/ hemodynamics. Initiation of CPB should be with the appropriate steps of protocol. Initiates gas flow to the oxygenator and begins timing perfusion procedures. Successfully initiates alarms and safety devices at appropriate times during the procedure. Communicates well and respectful to surgeon and staff. **(1-5)**
- Consistently able to synthesize data from monitoring devices, identify and prioritize problems even in complex -multi problem scenarios. Student should be able to “multi-task” during initiation of bypass, and demonstrates an overall awareness of monitoring parameters required to safely initiate CPB. **(1-5)**
-

Conduct of Bypass (35%)

- Consistently incorporates all available information to critically evaluate the adequacy and appropriateness of all monitored pressures. Selects appropriate actions needed to maintain within standard of practice. **(1-5)**
- Demonstrates the ability to systematically analyze data from blood gases and electrolyte management. Recognizes abnormalities and interprets them appropriately. Consistent inability to explain related pathophysiology even when faced with unfamiliar conditions. **(1-5)**
- Control and awareness of temperature management following consistent acceptable practices for cooling and rewarming to reach desired temperature. **(1-5)**

- Proficient in performance of anticoagulation management and assessment of anticoagulation status, independently determines patient's anticoagulation needs according to standard of practice. **(1-5)**
- Follows appropriate procedures for cardioplegia administration throughout the procedure. Quick to assess when changes are needed to insure appropriate delivery. Shows comprehensive understanding of temperature, route of administration, and flow/pressure relationships during all phases of the procedure. **(1-5)**
- Demonstrates surgical awareness by assessing adequacy of venous return, and consistently maintains vigilance to a safe operating level. Is able to articulate problems decreased venous return. Performs and exhibits surgical awareness by continuous scanning of the perfusion circuit. Is able to synthesize information received during the scan and evaluate/ modify perfusion technique. **(1-5)**
- Properly maintains perfusion record and charts appropriately per protocol. Perfusion record is free from errors and omissions. Charting is independently accomplished according to standard. **(1-5)**

Termination of Bypass (10%)

- Follows appropriate steps for terminal of CPB. Accurately assesses venous reservoir volume and is able to communicate the need for additional volume when appropriate.
  Consistently maintains vigilance to a safe operating level. Demonstrates understanding of the P/F/V relationships by successfully weaning from bypass independently. **(1-5)**
- Independently assess patient's health status and monitors circuit during termination of CPB. Demonstrates ability to terminate CPB within the time expected by the surgical team. Is able to terminate CPB without considerable change in patient status/hemodynamics. **(1-5)**

Professionalism (15%)

- Is able to communicate effectively with the surgical team. Communication is respectful and courteous, and appropriate.**(1-5)**
- Demonstrates a Professional attitude. Is prompt, punctual, reliable, and dependable. Student establishes and maintains an atmosphere of mutual respect and dignity with co-workers. Is an active member of the team and works well with others. Student is respectful and courteous to all operating room personnel. **S**tudent assumes the appropriate share of the workload, accepts work requests, volunteers, and follows through. Is motivated to provide “best patient care”. **(1-5)**

- Independently considers significant factors affecting patient's post-bypass health status and communicates changes to faculty when appropriate. Restocks perfusion supplies without reminders from faculty. Disposes of circuit without increased exposure to bloody waste. All equipment is cleaned appropriately per protocols. Completes all required paperwork **(1-5)**

Perfusion Practicum Case Requirements

The Commission on Accreditation of Allied Health Education Programs Standards and Guidelines for the Accreditation of Educational Programs in Perfusion states:

"A minimum of 75 clinical cases at AC-PE approved clinical affiliates requiring cardiopulmonary bypass must be performed by each student prior to graduation. A minimum of 10 clinical pediatric cases requiring cardiopulmonary bypass must be observed or performed prior to graduation."

If the student should have any concerns regarding their ability to complete this minimum criterion prior to graduation, they must contact the Clinical Coordinator or the Program Director.

Days Off and Absences

To optimize the students' clinical experience the clinical year schedule will resemble:

Session	Starting Date	Ending Date	Break/Holiday/Class
I	Aug. 27, 2018	Nov. 2, 2018	Illinois State Perfusion Society Meeting : Oct. 5th -6th Students back Nov. 5-9th
II	Nov. 12, 2018	Feb. 1, 2018	Nov 22nd -23rd Thanksgiving Break Xmas Break Dec. 24th -Jan. 4th Students back Feb. 4-8th
III	Feb. 11th, 2019	April 12th	AmSECT Conference March 7th-10th Final Exams /Project presentations April 15th-19th Students back… Spring Commencement April 27th ACPE Conference May 8th-10th

Students will be granted 5 clinical days off during the clinical year.

Students should request days off via email to the clinical coordinator and cc'd to the rotation clinical coordinator and program director. The email subject MUST say "day off." Students should be sure and save days for interviews in the spring semester because no additional days will be granted. In the

event of emergency illnesses, students must notify the Program Director of the need for day(s) off as soon as possible. Students must provide documentation of the illness as soon as possible. This documentation must come from an acceptable source (a signed note from a physician). If the student cannot provide documentation, the student will forfeit two days of clinical days off for every one day that the student is absent. Sick time will be deducted from the allotted clinical days off. If a student finds it necessary to take more than the allotted time off during the clinical courses, they will be required to make up time during breaks or at the end of the final semester. Make up time must be scheduled with the Program Director in advance. Students will not be eligible to take days off during April 15th- 19th.

Student Responsibilities Prior to Each Affiliation

1. Prior to the first clinical affiliation, students are required to:

- Contact the clinical rotation coordinator **2 weeks** prior to their start date in order to optimize their rotations via email (also cc Program Director / Clinical Coordinator).
- Provide the materials listed for that site. (CPR, immunizations, etc.)
    - Required elements should not expire while the student is participating in the clinical affiliation experience.
- Individual affiliates may also have specific requirements for students rotating to that site.

2. Students are expected to attend all assigned clinical experience days and to be punctual at all times. Students are not allowed to miss any days of the clinical experience for personal reasons. Failure to show up for the clinical assignment without contacting the appropriate individuals prior to the absence may result in failure of the course.
3. Students are expected to follow the inclement weather or disaster policy of the assigned affiliation. The student must never put himself/herself in peril while traveling to the clinical site. Time missed is to be made-up at the discretion of the site's Clinical Coordinator (CC).
4. Students are expected to adhere to the daily scheduled hours of the facility and/or the CC. Students may be required to work evenings, weekends, or holidays. Students and CC(s) should discuss the schedule prior to the start of the clinical affiliation.

Daily schedule during the clinical affiliation

1. Students are expected to be present at the affiliation during the scheduled working hours of the facility and/or Clinical Instructor (CI).
2. Students are expected to know their daily working hours and to adhere to that schedule.
    a. Students who are late more than three times may fail the affiliation.

b. Tardiness due to extenuating circumstances maybe excused by the CI and may not count towards the three tardy rule.

3. Students may be required to work evenings, weekends, and/or holidays.
   a. Students and CI(s) should discuss the schedule prior to the start of the affiliation.
   b. Students may be asked to adjust their schedule based on the needs of the facility.
4. Students may be required to extend their hours to benefit from:
   a. Continuing education in-services
   b. Departmental programs
   c. Additional learning opportunities
   d. At the request of the Clinical Instructor (CI)

In addition to the student requirements, there is also an expectation that the clinical affiliate will see that all students are:

- Given a 30 minute break for every 6 hours of a continuous clinical assignment.

- Given a ***minimum*** of 8 hours rest between assignments when the student has been present during 16 hours of a continuous clinical assignment.

- Given a formative assessment of their performance within 3 days of their clinical experience

UNDER NO CIRCUMSTANCE IS A STUDENT TO BE LEFT ALONE DURING THE CLINICAL EXPERIENCE "TO CARE" FOR A PATIENT ON CARDIOPULMONARY BYPASS OR ANY TYPE OF CIRCULATORY SUPPORT.

Dress Code

1. Professional attire and appearance is required at all times. Students must have one white lab coat with the RUSH logo. Students must display their RUSH identification badges at all times. If a facility requires the students to wear an I.D. from their facility, the student will only need to wear the facility ID.
2. The trunk region (midriff section) should be covered at all times. This includes classroom and clinical situations. Sequins, leather leggings and tops with shoulders cut outs are not appropriate attire.
3. Clinical attire applies to dress to be worn during clinical work or during visits to different clinical settings. The students are responsible for contacting their clinical instructors in advance for any other dress requirements that the clinic might have (lab coats, scrubs, etc.).
4. Failure to comply with the dress code may result in verbal and written warnings. Repeated failure to adhere to professional appearance of the clinical site may result in dismissal from the clinic.

Due to the disruptive nature of cell phones and pagers, all cell phones and pagers must be turned off or kept in the silent/quiet mode during all class periods, exams, and during all patient care times.

Social Media & Professional Considerations

Students should take caution in posting comments related to clinical education activities on social media sites or any other public communication venues. HIPAA guidelines must be followed at all times and patients should never be discussed in public arenas. Note that potential employers often search social media sites prior to hiring an employee. A student's professionalism may be judged by others from social media activity. When participating in clinical education one should not access or post on social media sites. For more information please review Rush University's Social Media Policy.

Orientation to the Clinical Site

The affiliation experience varies with each clinical site, as does the background and knowledge of each student. At the beginning of each clinical rotation, the student should receive a department orientation. A department orientation usually includes the following components:

1. A tour of the department and facility.
2. A review of the rules and regulations specific to the facility.
3. Introduction of team members (List team members, titles, and contact information).
4. An overview of the philosophy of the department.
5. An introduction to patient records, charts, scheduling, billing, etc.
6. A discussion of the affiliation schedule including hours of work and CI/student expectations.
7. A review of the types of experiences and learning opportunities available at the facility.
8. A review of specific protocols and guidelines used by the facility.
9. A review of the emergency procedures: contact persons with telephone numbers.
10. A discussion of the background, learning styles, and needs of the students and CI.
11. A discussion of the goals and objectives for the clinical affiliation for student and CI.
12. Information about the location: where to eat, cell phone policy, etc.

Cancellations of Affiliations

1. Clinical affiliations may be cancelled at any time. It is crucial to note that no selection/assignment is definite until the start day of the clinical affiliation. Clinical sites may cancel an affiliation secondary to such issues as: staffing shortages, patient census, or administrative issues. Sites must provide adequate time for the cancellation of clinical affiliations, so the academic program can reassign the student to

another clinical affiliation. If an affiliation is cancelled, under no circumstances should a student attempt to establish their own clinical rotation.

2. In the event of a cancellation of an affiliation, the Program Director or Clinical Coordinator will arrange a new clinical affiliation. Students may be required to travel or incur additional expenses when an affiliation is cancelled.

Professional Expectations

When participating in practical experiences, students are expected to behave in a professional manor at all times. Students are expected to demonstrate appropriate behavior in all interactions, including those with patients and their families, clinical staff and instructors. Students are expected to meet professional responsibilities (arrive early, come prepared, take responsibility for their actions) without being instructed directly to do so. Regular attendance at all scheduled clinical sessions is expected throughout the clinical rotation. Professionalism has been previously defined as the "manner, spirit, and methods of a profession and reflects the "underlying principles and values of the practitioner" including the following:

One accepts the idea of "on time, "prepared", "appropriate", and properly" are defined by the situations, by the nature of the task, or by another person.

One places the importance of professional duties, tasks, and problem solving above your own convenience.

One takes active responsibility for expanding the limits of your knowledge, understanding, and skill. You take responsibility for your actions, your reactions, and your inaction. This means you do not avoid responsibility by offering excuses, by blaming others, by emotional displays or by helplessness.

Opinions, actions, and relations are developed with others upon sound empirical evidence and upon examined personal values consistent with the discipline.

It is important for students to take initiative in all aspects of their clinical education including; planning for future needs, meeting clinical responsibilities, initiating communication, documenting one's progress in the program and monitoring achievement of clinical competencies and case count requirements. Student attainment of professional expectations will be formally assessed across a standard set of items at midterm and end of term in each practical experience. The list of Professional Expectations was developed with the assumption that all listed behaviors should be generalizable across all allied health disciplines. Unacceptable performance can result in removal from the clinical experience. The student may be required to participate in a Clinical Remediation Plan when they have difficulties with professionalism.

Clinical Remediation Plan

When a student is having significant difficulties in a clinical practicum a Clinical Remediation Plan will be developed. The Clinical Remediation Plan is a written document that includes a definition of the difficulties being experienced, specific objectives that need to be met, and mechanisms for assisting the student to achieve the objectives (e.g. specific experiences, support, or learning assignments). Difficulties may be in one particular area of performance or may include a number of problems. For example, difficulties may include deficits in clinical skills, reduced rate of improvement, &/or not meeting Professional Responsibilities. The nature of the Clinic Remediation Plan is individually determined and is defined largely by the particular problem(s) a student presents. The Plan may focus intensively on one aspect of clinical work, or may be more general focusing on a broad set of concerns. For example, a remediation plan may focus on professional expectations, clinical competencies, self-evaluation skills, interpersonal difficulties and/or weaknesses in integrating academic information into clinical practice. The student will meet with the Clinic Coordinator in order to help develop and/or review the Remediation goals, objectives, and requirements. The student's academic adviser may be involved in the remediation process; they will be kept informed of the student's progress throughout the term. The student is encouraged to discuss the Remediation Plan with their current Clinical Instructor(s), so that they can help develop learning experiences to assist the student to improve performance in areas of concern. Once the plan has been developed by the student with the Clinical Coordinator, the student must successfully meet the goals of the Remediation Plan before being permitted to participate in any subsequent practicum experiences. The student must achieve the set criterion levels defined in the Clinic Remediation Plan to obtain a passing grade in practicum before they are permitted to resume the regular sequence of clinical education practicum. During a Remediation Plan, if the student is still participating in regular clinical education activities the student's performance in clinic will be evaluated by their Clinical Instructor using the standard assessment of Clinical Competencies form for that practicum. Their performance on the Clinic Remediation Plan will be determined by the Clinic Coordinator, based on the measures defined in the Remediation Plan. Failure to meet Remediation requirements will be grounds for dismissal from the program. Across a student's education program they will be permitted to participate in no more than one formal clinic Remediation Plan.

Student-Clinical Instructor Problem Solving Procedures

Occasionally a student or clinical instructor will perceive a problem in the supervisory relationship. If not resolved, such problems may interfere with the clinical education experience and could affect patient care. Procedures have been developed for coping with problems between students and supervisors to provide early, fair and speedy resolution of problems. These procedures help to

ensure fair treatment of students and Clinical Instructors in the problem solving process. As soon as a student or Clinical Instructor perceives that a problem exists, the following procedures should be implemented:

1. Discuss the problem together - often simple misunderstandings can be resolved by discussion.

2. The Clinic Coordinator at the site should be informed of any issues and can be called in to facilitate problem solving.

3. If discussion does not resolve the problem, the Program Director should be contacted immediately. If agreeable, the Clinic Coordinator along with the student & Clinic Instructor will formulate a plan using the Clinical Training Action Plan Form ***(Appendix C; PAGE 63)*** to help with changes in the behavior of one or both people. Together the Clinical Instructor and the student should implement the plan and review it regularly to determine their progress. If the plan does not resolve the problem, the plan should be modified or a new plan initiated. The Clinic Coordinator should remain informed about the plan and the progress made.

4. If both the student and Clinical Instructor feel that they can make no further progress, they may decide to request re-assignment of the student. There is no guarantee of an immediate reassignment.

5. Students are recommended to contact the Program Director immediately when there are any concerns (even minor ones) and seek input on ways to work with and communicate effectively with their clinical instructor. Waiting until the end of an assignment to discuss concerns can result in an ineffective practicum experience, whereas early mediation and advice can result in improving things before the effects are too serious to repair.

Student's Evaluation of Learning and Instruction

(SEE APPENDIX D; PAGE 65)

As research has shown, students do not like to evaluate their clinical instructors; however, this is a very important component of a clinical education experience. The students will be given the opportunity to evaluate:

Clinical Instructors

- Students will evaluate clinical instructors using the electronic database system.
- The faculty supports the concept that in order to improve clinical teaching and clinical site experiences, the evaluations may be shared with the clinical instructors. The purpose of sharing the students' perception of the clinical experience is to commend excellent instructors and to provide other instructors with constructive criticism.
- All evaluations are anonymous and will be compiled into one report for the clinical site and for the clinical instructors. If evaluations are shared, any comments that may identify a student will be removed. All evaluation compilations will not be shared until the entire class has graduated from the program.

Clinical Site

- Students will evaluate each clinical site that they rotated to prior to graduation.
- All evaluations will be anonymous to preserve the privacy of the student.
- Clinical site evaluations will be maintained by the program.
- Any consistent or egregious concerns with the evaluations will be addressed with the clinical coordinator. The Program Director will facilitate this discussion and assist the site with an improvement plan.

TECHNOLOGY SUPPORT RESOURCES:

METC: (312) 942-6799

HOURS: Monday-Thursday 8:00 am - 7:00 pm CT, Friday 8:00 am - 5:00 pm CT
Saturday- Sunday, CLOSED

Blackboard: Technical support: (312) 563-2527
METC_Blackboard_Support (METC_Blackboard_Support@rush.edu)

Student Employment during the Program

The following guidelines apply to students holding outside jobs while in the program:

- The program maintains an intense curriculum that demands a great deal of time, effort, and energy. At the same time, it is important that students remain well balanced and allow sufficient time for social activities, recreation, and rest. Students are advised that outside employment may adversely affect their ability to perform at a high academic standard. Students may seek outside

employment during the first three semesters of the training program, but must not allow their employment activities to negatively impact their academic standings.

- Beginning with the summer quarter of year one, students will begin clinical rotations. Several factors make it even more difficult to maintain employment. The requirements of the rotations and the variability of both the hours and location of the rotations prohibit students' working during their second year.
- Students are not paid for the tasks they perform while on clinical rotations.
- While on clinical rotations, students may not provide services within the preceptor's practice apart from those rendered for their educational value as part of the clinical instruction experience. Students may not receive monetary compensation for work performed within the preceptor's practice.

Immunizations and Tuberculosis Testing

Proof of Immunity under Public Act 85-1315, Illinois College and University Immunity Requirement, stipulates that all students born after December 31, 1956 must show proof of immunity. While documentation of this information for compliance with state regulations is not mandatory for students who were born before 1/1/57, most colleges and programs at Rush have individual immunization requirements for their students. Program immunization requirements are mandatory for all students in those programs regardless of age.

- **Measles (Rubeola), Mumps, Rubella –** positive titers
- **Varicella –** positive titers
- **Hepatitis B –** immunization record and positive titers
- **Tetanus/Diphtheria –** booster within the last 10 years
- **Tuberculosis –** two-step PPD Mantoux Skin Test or the Quantiferon-TB Gold test with negative results
- **Meningococcal –** immunization record of one dose of meningococcal conjugate on or after the age of 16
- **Influenza –** each flu season, during the duration of the program

Professional Liability Insurance Coverage

All entering students are required to be covered by health insurance while attending Rush University. If you don't have other comparable coverage, and provided you are enrolled in a degree program at the University, you can sign up for insurance offered by Academic HealthPlans. This Preferred Provider Plan (PPO) allows you to choose from a large number of primary care physicians who are members of the plan.

If you have other health insurance, you must provide proof of coverage and verify that information annually, before registration for the fall term, through the Academic HealthPlans

website https://rush.myahpcare.com/

Illness or Injury of Student While Attending Classes

Illness or injury while in the classroom or clinical area must be reported to the professor or instructor present. Students who are pregnant should inform the clinical director who will inform the instructor so that no assignment will be made involving exposure to radiation or other hazards.

Use of Hospital Libraries

Use of hospital libraries varies according to agency policy. Check with current clinical instructor about the procedure needed.

RUSH UNIVERSITY MEDICAL CENTER HUMAN RESOURCES POLICIES & PROCEDURES

On occasion students will request to be excused from clinical activities. This policy is in regards to the request for temporary time away from the area of patient care due to an emergency rather than a request for time off. The policy below outlines the Rush University Medical Center's guidelines for these types of situations. Clinical affiliates are encouraged to touch base with the Clinical Coordinator or Program Director if any applicable scenario presents itself in order to assess each on a case by case basis. However this policy sets the framework for the appropriate course of action. Of note – the highlight of the policy is that patient care must come first. The student is expected to continue to perform all clinical duties until an accommodation, reassignment, or appropriate course of action is determined.

Staff Rights Policy

The Medical Center respects its staff members' cultural values, ethics and religious beliefs and the impact these may have on patient care. To ensure that patient care and treatment will not suffer if the hospital excuses staff members from participating in an aspect of care, the hospital establishes alternative methods of care delivery for these situations.

The aspects of care which are covered by this policy indicate any particular form of medical care which is contrary to the conscience of an employee or staff member, including but not limited to abortion, sterilization, and/or Do Not Resuscitate (DNR) status.

10.01 It is the employee's responsibility to notify his/her supervisor in a timely manner if there is any conflict or concern in their providing an aspect of patient care.

10.02 It is the supervisor's responsibility to determine whether the employee's request may be reasonably accommodated in a manner which does not jeopardize patient care.

10.03 Each situation will be evaluated in relation to maintaining continuous, effective patient care. In the event a requested accommodation is not reasonable, a transfer or a change in responsibility may result.

10.04 In either event, the employee may be responsible for providing appropriate patient care until a reassignment can be made.

10.05 Any questions regarding this policy should be directed to the Employee Relations department.

The policies and procedures contained in this manual are intended as a guide only. They do not constitute any enforceable promise and do not alter employment at-will. Managers and employees should seek guidance from Human Resources for clarification.

Rush Policies and Procedures

Additional information on all of Rush University's Policies and Procedures can be found via the following link: http://www.rushu.rush.edu/catalog/aboutrush/aboutrush.html

Rush University College of Health Science's Policies and Procedures: http://www.rushu.rush.edu/catalog/acadprograms/chs/chswelcome.html

RUSH UNIVERSITY POLICIES AND PROCEDURES FOR STUDENTS WITH DISABILITIES

For information or to request an accommodation, please contact your college representative listed below. Please do not make requests for accommodation to individual faculty members, lecturers or course directors.

In keeping with its goals to promote diversity among its student population, Rush University is committed to attracting and education students who will help to make the population of health care professionals' representative of the national population, including students with disabilities. In addition, Rush University wishes to insure that access to its facilities, programs and services are available to all students on a nondiscriminatory basis consistent with legal requirements as outlined in the Americans with Disabilities Act (ADA) of 1990 and the Rehabilitation Act of 1973. A reasonable accommodation is a modification or adjustment to an instructional activity, facility, program or service that enables a qualified student with a disability to have an equal opportunity to participate in all Rush University student activities. To be eligible for accommodations, a student must have a documented disability as defined by the ADA and section 504 of the rehabilitation Act of 1973. Both the ADA and section 504 define disability as (a) a physical or mental impairment that substantially limits one or more major life activities of such individual; (b) a record of such impairment; or (c) being regarded as having such a condition.

Counseling & Advising

The Student Counseling Center is located at 701 Kidston House, 630 South Hermitage Chicago IL, 60612. Students with personal or academic problems are advised to seek an appointment with the staff of the Counseling Center (312-942-3687). Counseling is strictly confidential.

Program Director

Julie Collins, MS, CCP, LP

600 South Paulina, Suite 730

Julie_A_Collins@Rush.edu

RUSH UNIVERSITY
COLLEGE OF HEALTH SCIENCES
CARDIOVASCULAR PERFUSION PROGRAM
STUDENT HANDBOOK

Dear Cardiovascular Perfusion Student,

This student handbook is intended to be an aid to you in your clinical year as you pursue your degree in Cardiovascular Perfusion. You are always welcome to come to me with any questions concerning the program.

Your next year here will be exciting, challenging and immensely rewarding. We feel confident that the structure and approach we have chosen will make you a successful student and eventually, a successful Perfusionist.

Sincerely yours,
Julie Collins MS, CCP, LP

STUDENT INFORMATION

Please fill out the information below, tear this page out and submit it to: Julie Collins MS, CCP, LP Rm. 730AAC

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Phone (home):_____ Phone (work):_____

Please inform the department office of any changes in address or telephone numbers during the course of this program.

Please read and sign the following:

I have read and understand the rules and regulations of the Cardiovascular Perfusion Program at Rush University as stated in the student handbook and agree to abide by them while I am a student in this program. I also agree that I will not cheat nor assist others in cheating. It is also my responsibility to report to the Program Director or course instructor if I observe anyone else cheating or violating any of the policies of this program.

Signed: _____ Date: _____

RUSH UNIVERSITY

COLLEGE OF HEALTH SCIENCES

CARDIOVASCULAR PERFUSION PROGRAM

STUDENT PROFESSIONAL AND COMMUNITY SERVICE REQUIREMENT

Participation in service activities is an important attribute of the health science professional. A hallmark of outstanding Rush students and alumni is the desire and ability to make meaningful service contributions. Community service activities may include volunteer activities (health fairs and clinics, health education, provision of health services to at risk or disadvantaged populations, and other outreach education or clinical activities) and service on community boards, committees, work groups and other service activities that promote the health and well-being of the community and its members. Professional service may include participation in the provision of state, national or international activities to advance the quality, access and effectiveness of health care services provided by allied health professionals.

Achievement of the College of Health Sciences Excellence in Service Goal is demonstrated, in part, through:

1. Student and faculty participation in community service activities
2. Student satisfaction with and appreciation for community service.
3. Students and faculty who provide leadership and support to professional associations, boards and committees.
4. Provision of community and professional continuing education to local, national, and international audiences.

In order to support achievement of the college's service excellence goals and objectives, the college has developed a professional and community service requirement for all CHS students as a part of their academic programs.

As a requirement for program completion, each academic degree granting program will establish a minimum service requirement for each student enrolled in the program of at least sixteen (16) contact hours of approved professional or community service.

Examples of activities that may be used to meet this requirement include participation in community health fairs, community health screening and/or health services, provision of community health education, participation in approved professional service and/or continuing education activities and

assistance with the delivery of seminars, lectures, workshops and related community or professional continuing education activities.

THIS IS A GRADUATION REQUIREMENT…

Rush University
College of Health Sciences
Perfusion Program Professional
& Service Documentation Log

Student Name: _____ Service Hours Acquired:_____

As a requirement for graduation, each student must complete at least eight (8) contact hours per year of approved community and/or professional service. Examples of activities that may be used to meet this requirement include: participation in community health fairs or other community screening, and/or service events; participation in approved professional service and/or continuing education activities; participation in CVP Program recruitment or other promotional activities; assistance with the delivery of seminars, lectures, workshops and related community or professional education activities.

The student listed above has acquired professional and/or community service by participating in the following activity (please describe in detail):

_____

_____

_____

_____

Title of Activity: _____ Date: _____

Approved by[1]: _____ Date: _____

Verified by [2]:_____ Date:_____

5. Participation in activities should be pre-approved by the Program Director or other designated program faculty member.

6. Satisfactory completion of the activity must be verified by a designated faculty member or community professional service activity provider or coordinator.

RUSH UNIVERSITY

COLLEGE OF HEALTH SCIENCES

ORGANIZATIONAL CHART

CARDIOVASCULAR PERFUSION PROGRAM

DIRECTOR

Julie Collins MS, CCP, LP

ACADEMIC FACULTY

Julie Collins MS, CCP, LP, Assistant Professor

Greg Mork MS, CCP, LP Director of Clinical Competency

David Durdov, MS, CCP, LP Clinical Coordinator

RUSH CLINICAL & INSTRUCTIONAL FACULTY

Julie Collins, MS, CCP

David Durdov, MS, CCP

Greg Mork, MS, CCP

Curtis Eldridge, MS, CCP

Urvee B Chauhan, MS, CCP

Tracy Powell, MS, CCP,

Michael Skreko, MS, CCP,

APPENDIX A
STUDENT CLINICAL PERFORMANCE STANDARDS

PATIENT WORK UP

1. History

The student should be able to:

A. Evaluate the patient's disease process including origin, progress, and treatment prognosis.

B. Identify any problems which might relate to the conduct of cardiopulmonary bypass.

C. Identify any abnormal findings including known allergies.

D. List and define the action of all medications the patient is receiving currently and in the recent past. Describe how these medications may influence cardiopulmonary bypass management.

E. Discuss any other significant diagnostic findings and their relationship to cardiopulmonary bypass such as ECHO, EKG, and radiology.

2. Physical

The student should be able to:

A. Describe the organ systems reviewed and explain any abnormal findings.

B. Relate how these abnormalities affect the diagnosis and the conduct of cardiopulmonary bypass.

C. Describe any other abnormal findings not related to the diagnosis and relate how these findings might affect cardiopulmonary bypass.

3. Laboratory report

The student should be able to:

A. Identify the patient’s hemoglobin, hematocrit, blood gases, coagulation profile, electrolytes, blood type, and other pertinent lab values.

B. Identify those values that vary from normal and the significance of these variations in terms of cardiopulmonary bypass.

C. Identify other lab work done such as cardiac enzymes and cultures that arc significant to the case. Discuss the significance of variations.

4. Catheterization/ Echocardiography Report

The student should be able to:

A. Present Cath and/or ECHO lab findings.

B. Discuss anatomical involvement.

C. Identify the patient's cardiac output, cardiac index, ejection fraction and discuss the significance of any variation from the norm.

D. Discuss the significance of the chamber pressures, resistances and any gradients present

5. Perfusion record

The student should be able to:

A. Generate the initial calculations on the perfusion record.

B. Generate the initial work-up information on the perfusion check list.

C. If charting responsibilities are resumed ... comply with specific site's protocol

D. Review and complete the pump record prior to filing inpatient's chart.

6. Surgical Protocols

The student should be able to:

A. Describe the operative procedure the patient will undergo.

B. Exhibit knowledge of and compliance with the surgeon, anesthesiologist and perfusion faculty protocols

EXTRACORPOREAL CIRCUIT

7. Component selection

The student should be able to:

A. Select the appropriate equipment for the procedure including, but not limited to: pumps, gas flowmeters, disposable holders, blenders, temperature control systems, safety devices, oxygenator, tubing pack, connectors, heat exchangers, filters, cardioplegia delivery systems, hemoconcentrators, cell saver and monitoring systems.
B. Describe the operational characteristics and specifications of the equipment selected.

8. Prime selection

The student should be able to:

A. Estimate the lowest, safest priming volume of the circuit.

B. Select the appropriate prime and calculate anticipated hematocrit, fibrinogen, COP, and heparin concentration at cardiopulmonary initiation.

9. Assembly

The student should be able to:

A. Assemble the circuit in a logical fashion that is consistent one day to the next, with previous thought given to what items need to be assembled first in an emergency.

B. Assemble the circuit without kinks or lines on the floor.

C. Assemble the circuit so that all components are in the proper holder and adjusted for the correct position for proper and safe conduct of CPB.

D. Assemble circuit so that all monitoring lines and safety devices are attached.

E. Assemble the tubing so that the tubing is run neatly from place to place so it is easy to evaluate the function of each segment

F. Set occlusions on all roller pumps.

G. Set up the complete circuit within 25 minutes.

10. Priming

The student should be able to:

A. Check the heat exchange for leaks.

B. Place clamps appropriately for CO_2 flush and cardiotomy or venous reservoir prime.

C. CO_2 flush using sterile technique and isolate arterial filter.

D. Initiate gas flow when appropriate.

E. Prime cardiotomy and/or venous reservoir with heparinized solution.

F. Prime the circuit in a logical and expedient manner.

G. Prime the arterial filter appropriately with no bubbles on the outlet side of the filter.

H. Prime sample and monitoring lines appropriately.

I. Prime entire circuit within I0 minutes.

J. When necessary with faculty approval obtain checked in blood components.

K. Displace crystalloid prime with blood/normalize prime.

L. Complete set up and prime of circuit for CPB initiation within 35 minutes.

11. Monitoring equipment

The student will be able to:

A. Check and set up all monitoring equipment to include pressure monitoring, expired CO_2,

inline blood gases and saturations, temperatures, oxygen analyzer and bubble and level detectors.

B. Explain and test the operating parameters, limitations and importance of all monitoring equipment.

PRE BYPASS

12. Checklist

The student will be able to:

A. Complete the checklist with the faculty before the possibility of initiating bypass exists.

B. Check the appropriate area associated with each item on the checklist.

C. Explain the importance and consequence of each item on the checklist and justify any N/A entries.

13. Pre bypass awareness

The student will be able to:

A. Communicate with the faculty and other students when leaving the room once the patient is in the operating room.

B. Note and be aware of any circumstances including hemodynamic status or complications of the operative procedure that might necessitate bypass.

C. Note and be aware of hemodynamic status referring to cardiac output, arterial blood pressure, PAP, CVP and PCWP pre bypass for comparison post bypass.

D. Note and be aware of any lab or hemodynamic changes that might necessitate changes in the circuit or prime. This might include addition of blood components, medications, ultrafiltration or dialysis.

E. Note and be aware of the patient's anticoagulation status and its appropriateness for that stage in the procedure. (i.e. during cannulation)

F. Initiate cardiotomy suction when appropriate, maintaining safety of circuit.

G. Communicate with field and appropriately assist with cannulation, volume infusion, and exsanguination.

H. Explain the importance of pre-bypass awareness.

14. Table Lines

The student will be able to:

A. Anticipate the table line hand-off

B. Receive table lines without contamination, delay or lack of communication.

C. De bubble table lines efficiently.

D. Communicate appropriately with the field during this time.

CONDUCT OF PERFUSION

15. Initiation

The student should be able to:

A. Communicate with the operative field regarding bypass initiation.

B. Minimally preload patient and check line pressure before taking clamp off the venous line.

C. Using the reservoir level and pressure monitor achieve a mechanically and physiologically smooth, safe initiation.

D. Achieve desired blood flow or oxygen delivery while maintaining an empty heart.

E. Maintain a safe level in the venous reservoir and communicate with the operative field when (D) and (E) are not compatible.

F. Adjust gas flow and note color of blood in arterial and venous lines.

G. Open arterial purge line, if appropriate to patient's flows.

H. Assure and maintain integrity of extracorporeal circuit.

I. Demonstrate knowledge of the physician's protocols regarding bypass initiation.

J. Explain the importance of (A) through (I) above and document any deviation experienced during the procedure.

16. Anticoagulation

The student should be able to:

A. Describe the coagulation process and role of heparin, Ca++, ATIII, etc. in this process.

B. Monitor and record anticoagulation during bypass by monitoring ACTs, Heparin Assay, TEG's and/or AT III levels in timely fashion.

C. Calculate additional heparin doses required using dose response method or heparin assay.

D. Demonstrate knowledge of other conditions that may affect ACT. (i.e. ATIII deficiency)

E. Demonstrate knowledge of effects of certain pharmacologic agents (i.e. aprotinin) on

ACTs.

17. Temperature

The student should be able to:

A. Describe the advantages and disadvantages of hypothermia.

B. Describe the effects of temperature gradients.

C. Maintain proper temperature gradients per protocol.

D. Cool and rewarm patient by protocol and communicate with the surgeon

E. At the initiation of warming and cooling monitor and document the water and arterial blood temperatures.

F. Maintain desired temperature by heater cooler adjustments thereby making temperature and the heater cooler status part of the scan.

G. Anticipate and prepare heater-cooler (s) for next temperature requirement during CPB.

18. Hemodynamics

The student should be able to:

A. Maintain blood flows, pressures and systemic vascular resistances in compliance with protocols and without large changes in blood flow or large boluses of medications.

B. Discuss the physiologic phenomenon associated with the patient's hemodynamic status.

C. Understand the significance of an elevated CVP or PAP and take appropriate action.

19. Pharmacology

The student should be able to:

A. Describe mechanism of action and doses of all drugs used during CPB.

B. Administer the appropriate drug at the appropriate dose at the appropriate time.

20. Hematocrit

The student should be able to:

A. Monitor hematocrit in timely fashion.

B. Determine desired hematocrit by protocol and patient oxygen consumption status.

C. Maintain desired hematocrit and colloid osmotic pressure by anticipating cell saving, plasmapheresis, ultra-filtration, adding blood or crystalloid, or facilitating urine output.

D. Justify all actions in adjusting hematocrit

21. Blood gases and oxygen saturations

The student should be able to:

A. Monitor blood gases and oxygen saturations in a timely fashion.

B. Determine acceptable limits for parameters by examining normal limits and the patient's status.

C. Maintain standards on pH, $pC0_2$, $p0_2$, $Sa0_2$ and $Sv0_2$.

D. Explain the importance and interrelationship of pH, $pC0_2$, $p0_2$, $Sa0_2$ and $Sv0_2$.

E. Determine the potential cause of acid-base imbalance.

F. Respond appropriately to acid base imbalance by appropriate adjustments of ventilation, flow, and/or addition of drugs.

22. Chemistry labs

The student should be able to:

A. Decide the appropriateness of running biochemical testing.

B. Appropriately treat any abnormalities.

C. Communicate the selected treatment with appropriate OR PERSONNEL.

23. Procedural awareness during bypass

The student should be able to:

A. Anticipate surgical teams' requests and upcoming events.

B. Respond to surgical teams' requests in an appropriate and timely fashion.

C. Report and describe stage of operative procedure.

D. Be aware of any volume changes in the reservoir.

E. Be aware of why these changes might have occurred and communicate appropriately with the surgical field.

F. Be aware and correct air locks in the venous line.

24. Safety

The student should be able to:

A. Identify potential hazards in the procedure.

B. Identify precautions to avoid these hazards.

C. Attach, periodically check and recognize all safely devices and alarms in the system.

D. Perform his/her duties in a responsible matter maintaining the patient's well-being as first priority.

25. Knowledge of emergency procedures

The student should be able to:

A. Identify potential emergency situations during CPB.

B. Explain and justify the appropriate response

26. Termination

The student will be able to:

A. Correct all acid base abnormalities prior to termination of bypass.

B. Communicate with anesthesia on ventilation and other readiness.

C. Have adequate volume in reservoir or readily available for transfusion.

D. Wean off bypass per physician’s protocol.

E. Monitor reservoir level and patient hemodynamics while communicating with the surgeon and anesthesia.

F. Note any abnormalities and potential treatment such as IABP.

POST BYPASS

27. Post bypass awareness :

The student should be able to:

A. Monitor the patient's hemodynamics and EKG, communicating any changes to team.

B. Monitor communication in the room regarding the patient's status.

C. Be prepared to take action.

28. Circuit volume

The student should be able to:

A. Infuse volume post cessation of venous return exercising all precautions and communicating appropriately.

B. Identify, when appropriate, the portions of the circuit that should be emptied to process blood for anesthesia.

C. Select appropriate processing for pump blood.

D. Process blood efficiently without diverting attention or wasting blood.

E. Communicate with anesthesia regarding the processed blood.

29. Coagulation

The student should be able to:

A. Calculate protamine dose by the dose response or alternative method in a timely fashion

B. Be aware of protamine infusion and the potential hazards to the patient and the circuit.

C. Report any potential reaction prospectively.

D. Take the appropriate precautions to avoid protamine in the circuit.

E. Obtain post protamine ACT, Heparin Assay, and/or TEG and communicate appropriately.

30. Clean up:

The student should be able to:

A. Participate in the cleanup process while still monitoring the patient.

B. Not compromise the circuit integrity before the lines are handed back.

C. Manage the cleanup process to clean the pump of the circuit as quickly as possible once lines are handed down and patient chest is closed.

D. Explain the significance of (B) and (C)

31. Paperwork:

The student should be able to:

A. Complete the pump record.

B. Manage all charges.

C. Distribute paper work appropriately and enter case in computer system.

D. Utilize incident reports liberally and file appropriately.

PERSONAL/ PROFESSIONAL

32. Capabilities :

The student will demonstrate the ability to:

A. Organize his/her thoughts in a logical matter.

B. Approach problem solving in a logical fashion.

C. Communicate with the clinical coordinator, clinical faculty, and other health care professionals.

D. Function as a team member.

E. Present an appearance that is appropriate to the clinical assignment.

33. Attendance

The student will:

A. Report to the operating room and the instructor at the appropriate time.

B. Contact the clinical coordinator if he/she is unable to report to the clinical assignment.

34. Communication:

The student will:

A. Use appropriate language, grammar, and tact when communicating inside and outside the clinical area.

B. Address the faculty, surgical, team and anesthesia team in an appropriate and professional manner and timely fashion.

APPENDIX B
GUIDE TO PROFESSIONAL CONDUCT

Professionalism is an essential part of medical care and protocol. It relates to the intellectual, ethical, behavioral and attitudinal attributes necessary to perform as a health care provider or manager. As it applies to his or her professional role, the student will be expected to:

Attention

1. Demonstrate awareness of the importance of learning by asking pertinent questions, identifying areas of importance in practice and reporting and recording those areas.
2. Promote a positive learning environment by avoiding disruptive behaviors in class, laboratory, and clinical or practicum rotations such as talking or other activities that interfere with effective teaching and learning.

Participation

1. Complete assigned work and preparation for class, laboratory, and clinical or practicum objectives prior to attending.
2. Participate in both formal and informal discussions, answer questions, report on experiences and volunteer for special tasks and research.
3. Initiate alteration in patient care techniques when appropriate via notification of instructors, staff and physicians.

Dependability and Appearance

1. Be punctual and reliable in completing assignments with minimal instructor supervision.
2. Promote a professional demeanor by appropriate hygiene, grooming and attire.

Communication

1. Demonstrate a pleasant and positive attitude when dealing with patients and co-workers by greeting them by name, approaching them in an open and friendly manner, and setting them at ease.
2. Explain procedures clearly to the patient
3. Ask patients how they feel and solicit patient comments regarding the patient's overall condition and response to assessment and/or therapy.
4. Communicate clearly to staff and physicians regarding the patient's status, utilizing appropriate charting, oral communication and the established chain of command.

5. Demonstrate a pleasant and positive attitude when dealing with co-workers, instructors, faculty, nurses and physicians.

Organization

1. Display recognition of the importance of interpersonal relationships with students, faculty, and other members of the health care team by acting in a cordial and pleasant manner.
2. Work as a team with fellow students, instructors, nursing staff and he physician in providing patient care.
3. Organize work assignments effectively.
4. Collect information from appropriate resources.
5. Correlate care to overall patient condition.
6. Adapt care techniques to overcome difficulties.
7. Devise or suggest new techniques for patient welfare or unit efficiency.

Safety

1. Verify identity of patients before initiating therapeutic action.
2. Interpret written information and verbal directions correctly.
3. Observe and report significant changes in patient's condition promptly to appropriate persons.
4. Act to prevent accidents and injury to patients, personnel and staff.
5. Transfer previously learned theory and skills to new/different patient situations.
6. Request help from faculty/staff when unsure.
7. Comply with hospital and university guidelines for performance.

Examples of critical errors in professional conduct and judgment include:

1. Failure to place the patient's welfare as first priority.
2. Failure to maintain physical, mental and emotional composure.
3. Consistent ineffective and/or inefficient use of time.
4. Failure to be honest with patients, faculty and colleagues.
5. Scholastic dishonesty in any form.
6. Failure to follow the Rush University Medical Center Code of Conduct.

Completion of Course Evaluations

1. Students are required to complete all end of semester course evaluations. All students will be given a grade of incomplete (I) until 100% completion rate is reported.
2. Students will not be allowed to register for classes until the grade of incomplete (I) is removed and replaced with either a letter grade or a pass/fail grade.

Suspected violations of the Professional Policy will be handled in accordance with the professional standards outlined in the student Handbook. Violators of this policy may be placed on academic probation and may be denied permission to continue in the program.

Harassment and Fraternization

While we encourage students to network within the perfusion community and get to know other perfusionists, we want to ensure the safety of both our students and clinical instructors. Any issue that may arise that makes either a student or clinical affiliate uncomfortable may be described as harassment. Please review the official RUMC statement below as well as the official policy located in the University handbook.

In order to avoid such situations, student and clinical instructor fraternization is strongly discouraged. We understand that students may be invited to team outings, manufacturer supported meals, hospital extracurricular events etc. We do not intend to bar attendance to these events, however we want to stress that professional behavior is expected. Students and clinical instructors should not place themselves in any scenario that could be construed as inappropriate; therefore one-on-one extracurricular fraternization is discouraged.

Harassment: Policies and Procedures

The Policies and Procedures on Sexual and Other Harassment for the University and nonacademic sectors of the institution are intended to increase the awareness of Rush's long-standing commitment to preventing harassment and to focus on the internal resolution of any complaints. Under these policies and procedures, the more familiar category of sexual harassment as well as harassment related to age, ancestry, color, disability as defined by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act, gender, gender identity and/or expression, marital or parental status, national origin, pregnancy, race, religion, sexual orientation, veteran's status, or any other category protected by federal or state law is prohibited. The provisions include protections for and prohibit retaliation against an individual making a complaint or supplying information about a complaint. They also incorporate

protections for a person who considers himself or herself accused in bad faith. While all administrators and supervisors have responsibility under this document, certain people have been specifically designated to deal with concerns and complaints that might come forward. Inquiries or complaints of harassment from students, residents, or faculty members will be handled through the Office for Equal Opportunity by contacting:

Paula Brown, MBA. (312) 942-7094
Manager
Room 128, Professional Building
8:30 a.m. – 5 p.m. Monday-Friday

Copies of the Policies and Procedures are available from the Office for Equal Opportunity and are on the Rush Intranet.

APPENDIX C
Clinical Training Action Plan
CARDIOVASCULAR PERFUSION PROGRAM

Student Clinician _____ Site_____
Clinical Instructor _____ Date of Plan _____

1. Definition of Concerns

2. Identification of Strengths and Weaknesses

Current Status	Student's clinical skills /behaviors	Clinical Instructor's Student's skills and behavior
Strengths		
Weakness		

3. Definition of steps/ objectives which need to be met along with a timeline for completion.

   Identification of strategies to be used by the Clinical Instructor and the student to facilitate achievement of the steps/objectives
   Define how progress on steps and objectives will be determined.
   Arrange a follow up meeting date: _____

Objectives/Steps (define in behavioral terms)

Define Measureable Objective/Steps to be taken (Be specific)	Who will do it/When will it be done	Summary of Results

4. Final Outcome (description from Clinical Coordinator, Clinical Instructor, Student)

Signature _____ Signature _____ Signature _____

Clinical Coordinator Clinical Instructor Student

APPENDIX D
Clinical Course and Faculty Assessment Instrument
Clinical Site _____
Faculty Evaluated_____

SA = strongly agreed, A = agree, D = disagree, SD = strongly disagree;

Circle your appropriate response:

1. The faculty member helped me accomplish the objectives of the course.
   SA A D SD
2. The faculty member followed the grading adequately as explained by course director.
   SA A D SD
3. The instructor was well organized clinically.
   SA A D SD
4. The instructor was able to communicate well.
   SA A D SD
5. The instructor challenged me intellectually.
   SA A D SD
6. The instructor practiced what they "preached" in regard to patient management.
   SA A D SD
7. The instructor let me practice at an appropriate pace.
   SA A D SD
8. The instructor was an effective clinical instructor.
   SA A D SD
9. The instructor was generally available for clinical consultation.
   SA A D SD
10. The instructor encouraged my questions about clinical situations.
    SA A D SD
11. The instructor allowed me to perform CPB set-up & prime to the best of my ability.
    SA A D SD
12. The instructor is well prepared to act as a clinical proctor.
    SA A D SD
13. The instructor gave me additional responsibilities in a reasonable time frame.
    SA A D SD
14. The instructor taught me new and valuable clinical practices.

SA A D SD

15. The instructor treated me with respect.
SA A D SD

16. The instructor influenced my clinical learning in a positive manner.
SA A D SD

17. The instructor is willing to accept criticism.
SA A D SD

Part II. Subjective Information

Strengths of this Rotation:

Areas for Improvement for this rotation:

Any additional comments:

THANK YOU FOR TIME AND EFFORT IN COMPLETING THIS EVALUATION.