

Bachelor of Science in Medical Imaging
St. Mary's/Marshall University Undergraduate Program Assessment Report
2010-2011

Respectfully submitted by
Dr. Rita Fisher RT (R)(CT)(CVI)(ARRT)
Program Director

I. CONSISTENCY WITH UNIVERSITY MISSION

The Mission statements of Marshall University, St. Mary's Medical Center and the St. Mary's School of Medical Imaging emphasize support for quality education, the expansion of knowledge through research and creative activities, the provision of service to society, to diversity, and finally, to academic freedom. The Mission Statement for the School of Medical Imaging follows. Key phrases from the Marshall University and School of Medical Imaging Mission Statements are abstracted from the original documents and appear in **Table I** to demonstrate the consistency.

School of Medical Imaging Mission Statement

The mission of St. Mary's School of Medical Imaging is to prepare qualified graduates in the area of imaging sciences through current educational methodologies. The faculty, in collaboration with internal and external groups, will foster the development of a learning environment that is responsive to local and national trends in health care to produce multi-competent radiology professionals.

To accomplish this mission, Medical Imaging:

Ensures the integrity of the programs through maintenance of rigorous professional educational standards and through high expectation of student learning and performance;

Encourages involvement of faculty in service to society and the profession and promotes lifelong learning in our students;

Supports the engagement of faculty in research and scholarly activities;

Provides an environment that is sensitive to a culturally, racially, and ethnically diverse student body, faculty, and staff; and

Maintains an environment that provides for academic freedom and shared governance.

Adopted by SOMI 3/2010

Table 1: Comparison of Marshall University and St. Mary's SOMI Mission Statement

Marshall University Mission Statement	St. Mary's School of Medical Imaging
Provide affordable, high quality undergraduate education appropriate for the state and the region.	Prepare qualified graduates in imaging sciences. The BS program prepares students to practice as both the entry level radiographer and the advanced practitioner.
Improve instruction through the use of innovative teaching methods that require students to become actively involved in the learning process and develop critical thinking skills necessary for life-long learning	The role of faculty in imaging education is to facilitate the students' learning experience through systematic guidance in their endeavors to acquire those knowledge, skills and judgments necessary for competence in the practice of medical imaging.
Enhance the quality of health care in the region	A key component of medical imaging is to promote safe radiation practices for both the public and occupational worker.
Educates a citizenry capable of living and working effectively in a global environment.	Each person is a unique individual, capable of rational thoughts and self-directed behaviors, with physiological, psychosocial and spiritual needs

II. Program Student Learning Outcomes

The SOMI will not graduate a class with the baccalaureate degree until 2012. The data provided below is from the previous five year American Registry of Radiologic Technologist (ARRT) primary certification examination in radiography. The program expects to maintain the same pass rates and standards. See appendix A. The program's goal is to exceed both the national pass rate and to exceed the mean on the five individual sections of the exam.

III. Assessment Activities

The ARRT requires certification candidates to not only successfully complete the didactic portion of an imaging program, but also to demonstrate clinical competence in a number of radiographic procedures. The learning sequence is for the student to be presented the procedure in lecture and laboratory. Once they have successfully passed the laboratory examination which includes safe radiation practice and appropriate patient care as well as imaging specific technical factors, they may practice the procedure in the clinic under the supervision of a staff technologist. Joint Review Commission on Education in Radiologic Technology (JRCERT) accreditation standards requires the student to perform all procedures with direct supervision until they have demonstrated competence. When the student feels confident in their ability, they will perform the procedure with a clinical instructor. After a student has successfully done so, they may then perform that procedure with indirect supervision. All mandatory and a number of elective procedure competencies (designated by the ARRT) must be completed prior to graduation. The assessment activities for procedural competency include the laboratory examination and the clinical competency evaluation.

Additional assessment is derived from lecture examination and clinical instructor evaluation. Students must achieve a 75% on lecture exams. Clinical instructor evaluations assess the overall performance of a student in the clinical setting including safe radiation practices.

Table 2 (below) exhibits the outcome assessment plan for the SOMI.

IV. Analysis/Planned Actions

There is no standardized practice examination in the imaging sciences, however, SMMC SOMI students are required to pass a practice exam prior to graduation with a minimum score of 85%. The exam is similar in format and content to the ARRT exam. Students are allowed three attempts to pass the exam. No student has failed to pass the exam by the third attempt. The program utilizes a variety of resources for the examination included some commercial ARRT board review sources.

V. OVERVIEW OF CHANGES IMPLEMENTED IN YOUR PROGRAM THIS PAST YEAR BASED ON RESULTS AND PLANNED ACTION SPECIFIED IN LAST YEAR'S REPORT.

No applicable

VI. SPECIFY ANY CHANGES/MODIFICATIONS MADE TO YOUR PROGRAM BASED SPECIFICALLY ON DATA OBTAINED DURING ASSESSMENT DAY ACTIVITIES.

None.

Table Two: Outcome Assessment Plan

2010-2011 Assessment plan					
Program Effectiveness					
Outcome (Effectiveness)	Measurement Tool	Benchmark	Timeframe	Responsible party	Results
Students will pass the ARRT national certification on the 1 st attempt	ARRT 1 st Time Pass Rates	85% or higher	January	Program Director Advisory Board	93% pass rate. One student failed the ARRT exam on the first attempt, but was successful on the retake
Of those pursuing employment, students will be gainfully employed within 6 months post-graduation	Graduate Survey	100% of graduates will be employed within 6 months	March	Program Director Advisory Board	67% of May 2010 graduates found employment within the time period.
Students will complete the program within 36 months	Retention Rate	85% or higher	June	Program Director Advisory Board	100% retention of junior class into senior 85% of the Sophomore into Junior class. See explanation below.

Students will be satisfied with their education	Graduate Survey	Respondents will indicate satisfaction with an average score of 3 or better (4 point scale)	March	Program Director Advisory Board	Average score 3.33/4
Employers will be satisfied with the graduate's performance at the entry level.	Employer Survey	Respondents will indicate satisfaction with an average score of 3 or better (4 point scale)	March	Program Director Advisory Board	Average score: 4/4

Goal One: Student Learning: Students will be clinically competent					
Outcome	Measurement Tool	Benchmark	Timeframe	Responsible party	Results
Students will apply positioning skills	Laboratory Simulation-	Average score of 3.5 or higher (4-point scale)	Spring Semester	Laboratory Instructor	Average = 3.55 (Sophomore)
	Clinical Competency	Average score of 3.5 or higher (4-point scale)	Spring semester	Clinical Coordinator Clinical Instructors	Average = 3.90 (Sophomore) Average = 3.98 (Junior)
	Clinical Instructor evaluation	Average score of 3.5 or higher (4-point scale)	Spring Semester	Program Director Clinical Instructors	Average = 3.05 (Sophomore) Average = 3.54 (Junior)
	Terminal Evaluation: procedural	Average score of 3.5 or higher (4-point scale)	5 th Semester	Laboratory Instructor Program Director	To be assessed Spring of 2012
Student will select appropriate technical factors	Laboratory Simulation	Average score of 3.5 or better(4-point scale)	Spring semester	Laboratory Instructor	Average = 3.96 (Sophomore only)
	Clinical Competency	Average score of 3.5 or higher (4-point scale)	Spring Semester	Clinical Coordinator Clinical instructors	Average = 3.95 (Sophomore) Average = 3.05 (Junior)
	Clinical Instructor evaluation	Average score of 3.5 or higher (4-point scale)	Spring Semester	Program Director Clinical Instructors	Average = 3.05 (Sophomore) Average = 3.54 (Junior)
	Terminal Evaluation	Average score of 3.4 or higher (4-point scale)	5 th Semester	Laboratory Instructor Program Director	To be assessed Spring of 2012
Students will practice radiation protection	Laboratory Simulation	Average score of 3.5 or higher (4-point scale)	Spring Semester	Program Director	Average = 3.47 (Sophomore)
	Clinical Competency	Average score of 3.5 or higher (4-point scale)	Spring Semester	Clinical Coordinator Clinical instructors	Average = 3.99 (Sophomore) Average = 3.97 (Junior)
	Clinical Instructor evaluation	Average score of 3.5 or higher (4-point scale)	Spring Semester	Program Director Clinical Instructors	Average = 3.72 (Sophomore) Average = 3.93 (Junior)
	Terminal Evaluation	Average score of	5 th Semester	Laboratory Instructor	To be assessed Spring of

		3.5 or higher (4-point scale)		Program Director	2012
Student will demonstrate ethical behavior and understand of HIPPA	Clinical Competency (Professionalism)	Average score of 3.5 or higher (4 point scale)	Spring Semester	Clinical Coordinator Clinical instructors	Average = 3.99 (Sophomore) Average = 3.98 (Junior)
	Clinical Instructor evaluation (Professionalism)	Average score of 3.5 or higher (4-point scale)	Spring Semester	Program Director Clinical Instructors	Average = 3.50 (Sophomore) Average = 3.82 (Junior)

Goal Two: Students will use critical thinking and problem solving skills					
Outcome	Measurement Tool	Benchmark	Timeframe	Responsible party	Results
Students will	Clinical competency form: trauma competencies only	Average score of 3.5 or better	Spring Semester	Clinical Coordinator Clinical Instructors	Average = 3.96 (Junior)
	Clinical instructor evaluation	Average score of 3.5 or higher	Spring Semester	Clinical Coordinator Clinical instructors	Average = 3.04(Sophomore) Average = 3.53 (Junior)
Student will demonstrate critical thinking and problem solving skills					
	MI 310 Clinical Practice V: Terminal competency evaluation	Average score of 3.5 or higher.	Junior year Spring semester	Laboratory Instructor Program Director	To be assessed spring of 2012

Goal 3: <i>Students will exhibit effective communication skills in the healthcare setting.</i>					
Outcome	Measurement Tool	Benchmark	Timeframe	Responsible party	Results
Students will use effective oral communication skills with clinical staff and patients	Laboratory Simulation	Average score of 3.5 or higher (4-point scale)	Spring Semester	Laboratory Instructor	Average = 3.92 (Sophomores only)
	Clinical Competency Form	Average score of 3.5 or greater (Scale of 4)	Spring Semester	Clinical coordinator clinical instructors	Average = 3.94 (Sophomore) Average = 4 (Junior)
	Clinical Instructor Evaluation	Average score of 4 or greater Scale of 5)	Spring semester	Clinical coordinator clinical instructors	Average = 3.40 (Sophomore) Average = 3.74 (Junior)
Students will practice written communication skills.	Clinical Competency Form	Average score of 3.5 or greater (Scale of 4)	Spring semesters	Clinical coordinator clinical instructors	Average = 3.91 (Sophomores) Average = 3.90 (Junior)
	MI 402 Advanced Practice Research paper.	Score of 80% or better on the research paper rubric	Senior year-spring semester	Course instructor	To be assessed in 2012

Goal 4: <i>Students will evaluate the importance of professional growth and development</i>					
Outcome	Measurement Tool	Benchmark	Timeframe	Responsible party	Results
Students will synthesize the importance of continued professional development	See below	Score of 80% or better on presentation rubric	Sophomore year Spring semester	Program director	See below
	See below	Score of 80% or better on grading rubric	Senior year Fall semester	Instructor	See below
Students will	Post-Evaluation of	Score of 3 or better	Junior year	Program Director	See below

summarize their professional obligations upon obtaining their ARRT and the value and role of professional societies	state professional organization conference in regard to their role in professional development	(grade scale of 4)	Fall semester		
	MI 409 Advanced Clinical Practice Portfolio Section 3: Five year professional plan	Score of 85 or better on the section	Senior year Spring semester	Program Director	To be implemented in Spring 2012

Explanation

Program Effectiveness

ARRT exam results for academic year August 2010-May 2011. One student did not pass the exam on the first attempt, but did on the subsequent attempt. The overall score average is slightly lower than previously and the program intends to change the review process for the 2013 class. There will be no class sitting for the exam in May 2012 as the program makes the full transition to the four-year program.

Note: This data is for the entry level ARRT exam only. We do not have access to the data for the advanced imaging examinations pertinent to coursework taken by the senior radiography students. Those exams cannot be taken until the applicant has successfully sat for the entry level exam. Data on advanced exams is not made available to program directors as the students are already credentialed radiographers.

Annual Program Summary Report

SCHOOL FOR MEDICAL IMAGING-RADIOGRAPHY
ST MARY'S MEDICAL CENTER
RITA FISHER
2900 1ST AVE
HUNTINGTON, WV 25702-1241

School ID: 1834
Date Generated: 11/28/2011

Summary Report for 2011

Radiography

Section	Section Content	Number Of Questions	Mean Section Scaled Score
A	Radiation Protection	40	8.8
B	Equipment Operation and Quality Control	24	7.8
C	Image Production and Evaluation	50	8.1
D	Radiographic Procedures	60	8.5
E	Patient Care and Education	26	8.9

MEAN SCALED SCORE
FOR TOTAL TEST:

84.2

PERCENT OF
EXAMINEES PASSING:

93

NUMBER OF
EXAMINEES:

14

NOTES:

These summary statistics are based on program graduates taking the test for the first time (refer to NUMBER OF EXAMINEES box in the table to the right).

Total scaled scores are reported on a scale of 1 to 99. These are not percentages. A total scaled score of 75 or greater is required to pass.

Section scores are reported on a scale of 1 to 10. Pass/Fail status is not determined from section scores. Section scores are for advisory purposes only. They provide a general indication of test performance in each content area.

Appendix B: Note that national comparison data will not be available until January 2012.

Radiography

Report based on dates from 01/2007 through 12/2011

National Comparison Report

SCHOOL FOR MEDICAL IMAGING-
RADIOGRAPHY

School ID: 1834

ST MARY'S MEDICAL CENTER

Date Generated: 11/28/2011

RITA FISHER

2900 1ST AVE

HUNTINGTON, WV 25702-1241

Report based on dates from 01/2007 through 12/2011

Radiography

Calendar

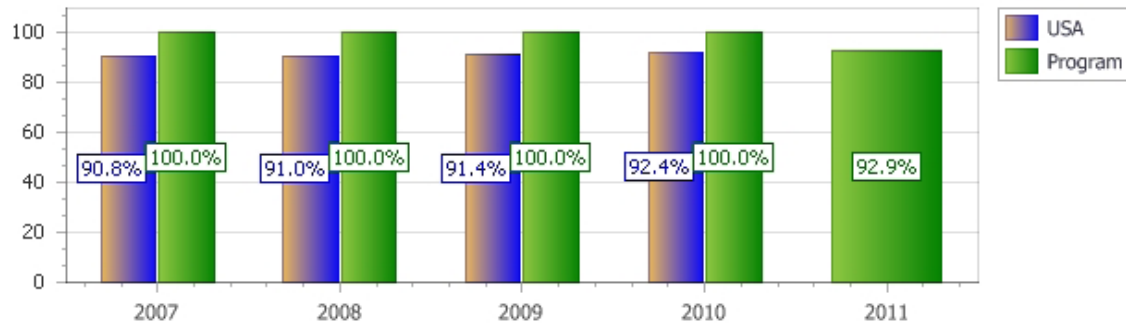
Number

Section Means

Total Percentile

Year	Group	Candidates	A	B	C	D	E	Mean	Rank	% Pass
2007	Program19		9.1	8.6	8.5	8.9	9.3	88.7	84	100.0
2007	USA	14142	8.7	8.3	8.3	8.4	8.8	84.7	-	90.8
2008	Program17		9.0	8.6	8.8	8.9	9.4	89.2	84	100.0
2008	USA	14210	8.6	8.2	8.4	8.4	8.8	84.6	-	91.0
2009	Program17		8.9	8.5	8.8	8.7	9.3	88.0	78	100.0
2009	USA	13762	8.6	8.2	8.4	8.4	8.9	84.8	-	91.4
2010	Program17		9.0	8.8	8.9	9.0	8.9	89.3	84	100.0
2010	USA	13550	8.7	8.2	8.3	8.5	8.7	84.9	-	92.4
2011	Program14		8.8	7.8	8.1	8.5	8.9	84.2	53	92.9

Program vs USA Pass Percentage



NOTES:

- (1) A percentile rank indicates the percentage of scores at or below the corresponding mean scaled score. Percentile ranks are rounded to the nearest whole number.
- (2) These percentile ranks were not obtained by comparing your school mean to all other school means, but rather by comparing the mean score of your program's graduates to the distribution of scores for all US graduates.
- (3) Mean scores and percentile ranks based on few candidates are not stable and should be interpreted with caution.
- (4) To ensure student confidentiality, dashes indicate either too few candidates, or data is not yet available, or does not apply.
- (5) Content specifications that serve as the basis for section scores are periodically revised. Consult this [link](#) to see the content specifications for the past several years

Employment

Employment opportunities in medical imaging are depressed across the entire US as indicated by the 2010 staffing survey conducted by the American Society of Radiologic Technologists <https://www.asrt.org/media/pdf/research/ASRTRadStaffingSurvey2010.pdf> The 2010 graduate employment rate was 67%. Seven of the 16 May 2010 graduates found employment within six months of graduation. Three have notified the program that they have found subsequent employment and one student entered a radiation oncology program. The May 2011 survey will be sent to graduates and employers in early January.

Retention

Retention rate overall for 2010-May 2011 was 88%. Sophomore retention rate: 88% 24 students were admitted to the sophomore class in Fall 2010. Two students were dismissed for failure to pass required coursework. Three students withdrew from the program in Spring 2011; two were failing and one decided to change majors. One student requested a medical leave of absence. Junior and senior retention rate was 100%. The program continues to look for more effective means of educating incoming students regarding the academic requirements of the program and the profession of medical imaging.

Graduate/Employer Survey results

The employer response was 86% (6 out of 7) but the graduate response was only 19% (3 out of 16) so data from the graduate response is somewhat limited in scope. Satisfaction with the program was rated a 3.33/4 by those graduates who did respond. Employer satisfaction with the entry level skills of graduates rated 4/4. These responses are consistent with previous years and no action is planned.

Goals and Outcomes

The program continues to refine assessment tools most appropriate to measuring desired outcomes, especially in those that are more subjective in nature. Neither professional radiographers nor imaging students do not typically write in the patient's progress notes, so assessing written communication skills as related to their professional work is challenging. We do assess written communication in the clinical arena as the student's enter pertinent data into the imaging equipment computer for exams, however, we do not feel this is a sufficient tool to measure the overall effectiveness of the student's written communication ability both for the Program's outcome assessment nor to meet the overall degree profile and the University's mission regarding written competence. Students have been required to submit a research paper to the West Virginia Society of Radiologic Technologist's annual meeting. Submission of a paper, however, is not an adequate measurement as only three papers are determined winners. Moreover, a single paper is insufficient to measure progress throughout the program. Consequently, the program is looking at each class within the curriculum and will attempt to standardize a writing rubric to be used in multiple courses. This will allow us to compare rubrics at the end of each semester to evaluate both individual student progress and overall program effectiveness in this category.

Measurement of professional development is another area where we have been unable to derive a satisfactory measurement tool that provides meaningful data. The program plans to develop a progressive assessment in this area. Students will complete a short research assignment on professional organizations in the Introduction to Medical Imaging class in the fall of their first year in the program. They will attend the state WVSRT conference in the fall of their junior year, including the business meeting, and submit a written analysis of the purpose of the WVSRT. They will also submit a portfolio in the senior year which will include a discussion of the professional examination for their track of study and the life-time learning required of a professional radiographer. This three year

progressive curriculum requirement should provide a better assessment tool for the Program to evaluate the goal of professional development.

Most of the clinical assessments met or exceeded the benchmark. Analysis of the data, however; does seem to indicate variation in measuring the same outcome with different tools. The Program plans to review each of the tools and derived data from each tool. We want to try to eliminate as much bias in the tool as possible so that results can be analyzed as reflective of the Program's effectiveness in each area.