IDAHO STATE UNIVERSITY – Program Assessment Summary Report

Program: Radiographic Science
Contact Person: Christopher Wertz, Program Director
College: College of Health Professions

PURPOSE OF THE RADIOGRAPHIC SCIENCE PROGRAM

The Radiographic Science Program is designed to develop the technical skills and knowledge necessary for the student to satisfactorily function in the role of a radiologic technologist. The program seeks to provide pertinent learning experiences which will enable the student to demonstrate competency in the technical aspect of the profession as well as the human relations aspect. The program further seeks to develop the students' interests in the professional societies as well as the possibilities for continuing education.

The Radiographic Science Program is eighteen months in duration after completing the necessary prerequisites. During this two-year period, the student will receive didactic experience at the University, combined with clinical experience at the affiliated hospitals and clinics. The student can earn a Bachelor of Science degree after satisfactorily completing the appropriate curriculum. Upon satisfactory completion of the radiographic science curriculum and prerequisites, the student is eligible to write the national registry examination for radiologic technologists sponsored by the American Registry of Radiologic Technologists (ARRT).

Bachelor of Science in Radiographic Science

The Bachelor of Science degree is a four-year curriculum. During the first two years the student takes general education, basic science, and business courses at the University. During the two professional years, the student studies and practices the clinical application of radiography at the University's energized laboratory and at affiliated hospitals. Upon completion of the program, the graduate is eligible to take the national examination for certification administered by the ARRT.

A variety of assessment methods are used to determine if the student is achieving the goals of the program. Some of these include: tests, laboratory exercises, projects, assignments, student demonstrations, image critiques, observation, and performance evaluations.

The Radiologic Technologist is one of many individuals who work together as a team to meet the needs of the medical community and society by providing patients with the best possible care. Because of the rapid growth of the medical field, there is an ever increasing need for radiologic technologists.

PROGRAM PHILOSOPHY

Idaho State University's Radiographic Science Program was developed with the philosophy that didactic education and clinical experience, which includes "hands on" should happen together for continuity during learning. Therefore, during the entire program the student learns in the laboratory

setting and applies those skills acquired in the clinical setting. This happens on a weekly basis. Furthermore, in the classroom students acquire the theoretical information necessary to perform as technologists. The next step involves laboratory experiences where the opportunity to apply technological skills is acquired by using phantoms and simulations. Students then progress and perfect their skills by working with technologists in a clinical environment. Additionally, several of the classes are taught by the Physics, Biology, and Healthcare Administration Faculties. This is atypical of most Radiographic Science programs and is a unique feature that sets the program apart from other programs. Our philosophy is students who learn from experts become experts. When graduation approaches students are ready to enter the profession confidently.

MISSION STATEMENT

The Mission of the Radiographic Science Program is to provide students with both the academic and technical foundations to competently and safely perform Radiologic procedures, to prepare qualified imaging technologists who will ethically respond to the needs of patients with technical competence and compassion, and to assume a vital professional role as a medical team member.

Vision

Prepare leaders in radiography for today and tomorrow by providing baccalaureate education.

Core Values

- Academics – promoting excellence in all academic endeavors.
- Knowledge – recognizing the significance of new knowledge in a profession that is predisposed to change while maintaining traditional values and emphasizing the needs of the patient.
- Dedication – to help meet the statewide and regional needs by providing access to quality education to prospective students.
- Community – to help meet the needs of the community in the health care setting by providing competent, qualified, technologists who are eligible upon graduation to sit for the national certification examination in radiography sponsored by the American Registry of Radiologic Technologists (ARRT).

PROGRAM GOALS/OUTCOMES

The Radiographic Science Program faculty promotes knowledge and discovery for all students in our program by committing to the following goals:

1. Students will use critical thinking and problem-solving skills**.**
2. Students/graduates will be clinically competent.
3. Students will be able to effectively communicate.
4. Students will demonstrate the importance of professional growth and development.

Student Driven Effectiveness Assessment

The Radiographic Science Program and the Division of Health Sciences also administers a Student Driven Effectiveness Assessment each semester. This assessment is a method used to evaluate the program from the vantage point of our customer, the student. Continuous Quality Improvement guides program officials in looking for opportunities to improve in all aspects of the collegiate experience provided to our customer. The assessment includes a four question evaluation administered at the end of each semester. Students are asked to answer the following questions:

1. Has the Radiographic Science Program met your expectations?
2. Would you recommend the Radiographic Program to another student?
3. List the Top 3 Positive experiences this semester.
4. List 3 things that would enhance the experience in the Radiographic Science Program.

This assessment tool, which includes all student responses, an evaluation by faculty, an action plan, follow-up, and all survey results, can be reviewed on the department Web site. It is titled "Division of Health Sciences Student Driven Effectiveness Assessment Plan, and is located at the bottom of the page at the following hyperlink:

Division of Health Sciences Student Driven Effectiveness Assessment

Outcomes Assessment Plan

Radiographic Science Program

The Radiographic Science Program at Idaho State University will provide a quality and diverse education that enables our graduates to become a valuable member of the health care team.

(The cycle of assessment for the plans below was August 2019 – July 2020)

Goal 1: Students will use critical thinking and problem-solving skills.					
Outcome	**Measurement Tool**	**Benchmark**	**Timeframe/Responsible Party**	**Results**	**Analysis/Action Plan**
1. Students will select appropriate scholarly and peer-reviewed journal articles.	RS 4450 Annotated Bibliography rubric criteria "Article"	Average score >90% for the "article" criteria on both annotated bibliography assignments	4th semester Course instructor	n=21 2016=96% 2017=98% (n=20) 2018=99% 2019=99% (n=20)	Benchmark was met. Students must select a peer-reviewed, scholarly journal article published within the last 5 years written on their chosen topic and must relate directly to medical imaging. This selection process requires critical thinking skills to apply the assignment criteria to an infinite number of article options. **Action:** 4th year of assessment. Will continue to monitor
2. Students will modify routine imaging parameters for trauma patients.	RS 3340 Lab Trauma Scenario assessment	Average score ≥4 on a 5 point Likert scale	1st semester	n=21 2016=4 2017=4.9* 2018=4.5 2019=4^	Benchmark was met *Note: In 2017 only 1 trauma scenario of a cross-table lateral hip was used based on available time in the lab curriculum. ^Note: In 2019 the measure was split so RS 3340 and RS 3341 each had their own measure. Previously the measure was combined results from RS 3340/3341 During lab time students practiced trauma scenarios imaging our full body x-ray phantom on specific anatomies from each chapter. This group activity helps students collaborate and critically think to know how to perform in a trauma situation. **Action**: 4th year of assessment. Will continue to monitor
	RS 3341 Lab Trauma Scenario assessment	Average score ≥4 on a 5 point Likert scale	2nd semester	n=21 2019=unavailable*	In 2019, measure for RS 3341 was separated from RS 3340/3341 measure. *In Spring 2020 (2019 assessment year) COVID required online instruction. No trauma lab scenarios were used. **Action**: Will start to monitor in Spring 2021 (2020 assessment year)

Goal #2: Students/graduates will be clinically competent.					
Outcome	**Measurement Tool**	**Benchmark**	**Timeframe/Responsible Party**	**Results**	**Analysis/Action Plan**
1. Students will apply positioning skills.	RS 3340 Score on positioning criteria during lab test #3	Each position is worth 2 points. There are 4 projections per lab test. The average positioning score will be > 90%	1st Semester Course Instructor	n=21 2018=97.6% 2019=95.5%	Benchmark was met For lab testing, each position (of the 4 total positions per lab test) is worth 2 points. Positioning in lab testing is evaluated on standards set in Bontrager's textbook. **Action:** 2nd year of assessment. Decided to move measurement tool to lab test #5
2. Students will demonstrate knowledge in radiation protection.	RS 3388 Radiation Protection-Comprehensive Final Exam Grades	Average score > 80%.	2nd Semester Course Instructor	n=21 2013=94% 2014=unavailable 2015=93% 2016=86% (n=20) 2017=84% 2018=88% 2019=92% (n=20)	Benchmark was met. The RS 3388 course focuses on radiation practices and standards. The final exam for the course comprehensively assesses all the material covered throughout the semester. **Action:** Decided to increase benchmark to 85% for 2020 and continue to monitor
	Student quarterly dosimetry reports	No student will have >30 mrem exposure in any quarter	End of each quarter Program Director	n=42 # of instances of dosimetry readings >30 mrem in a quarter 2017=2 (n=41) 2018=4 2019=7 (n=41)	Benchmark was <u>not</u> met. In 7 instances students exceeded the goal. After discussion with the students it was discovered that they were using the ISU dosimeter during clinical time and intern work time. The students were advised to obtain a second dosimeter from their employer to use when not on ISU time. Still, no student exceeded the ISU 100 mrem level for any quarter **Action:** 3rd year of assessment. Decided to increase benchmark to ">50 mrem" in 2020

Goal 3: Students will be able to effectively communicate.					
Outcome	**Measurement Tool**	**Benchmark**	**Timeframe/Responsible Party**	**Results**	**Analysis/Action Plan**
1. Students will write clearly using AMA and ASRT style format.	RS 4450 quiz "ASRT Style Guide"	All students will receive a >90% at on the quiz	4th Semester Course Instructor	n=21 2016=96% 2017=98% (n=20) 2018=94% 2019=95%	Benchmark increased to ">90%" for 2018 The ASRT Style Guide quiz assesses students' knowledge of specific English and formatting guidelines required by the ASRT for manuscript publication. **Action:** 4th year of assessment. Will continue to monitor. Decided to increase grading strictness (i.e. only allowing 1 attempt or giving a time limit on the quiz) for 2020
2. Students will demonstrate proper and effective communication with patients during an exam.	RS 3340 Lab final "patient intake" score	Average score >90%	1st semester Course instructor	n=21 2018=98.6% 2019=96.6%	Updated measure for 2018 to use more specific communication grading criteria Students perform a patient intake assessment as part of lab testing. The intake includes such elements as AIDET, acquiring a patient history, verifying pregnancy status, and metal artifact screening. **Action:** 2nd year of assessment. Will continue to monitor
	RS 4488 Communication audit form	Average score >90%	3rd semester Clinical Coordinator	n=21 2019=94%	Updated measure for 2019. New audit of student communication with patients will be used. Students are evaluated in clinical setting through a survey instrument in regards to patient communication and AIDET. **Action:** 1st year of assessment. Will continue to monitor.

Goal #4: Students will demonstrate the importance of professional growth and development.					
Outcome	**Measurement Tool**	**Benchmark**	**Timeframe/Responsible Party**	**Results**	**Analysis/Action Plan**
1. Students will advance professionally by performing qualitative research.	RS 4450, Senior students will write an 8-10 page literature review or case study and submit the work to a professional society competition.	All students will receive a >80% at the completion of the paper and an ISU student will place 1st, 2nd, or 3rd place at the ACERT and/or ISRT conference.	4th Semester Faculty	n=21 2013=100% 2014=100% 2015=95% 2016=95% 2017=95% (n=20) 2018=95% 2019=100% (n=20)	Benchmark was met. ACERT = 1st and 3rd place in the investigational category ISRT = *Not held due to COVID This indicator gives students a sense of accomplishment. Generally some students complain at the beginning of the semester, but upon completion of the exercise most generally agree that the experience was highly beneficial. Success this year at the ACERT conference is validation for faculty of quality and feedback from students provides a sense of accomplishment by knowing that they can succeed professionally and add to the knowledge base of the profession. This outcome is important as the degree awarded at ISU is a B.S. degree in Radiographic Science. This tool will be used repeatedly. A goal of the program is to instill in students the importance of contributing knowledge at the collegiate level that will instill desires to publish professionally in the journal *Radiologic Technology* in the future. **Action:** Decided to retire this measure in 2020
	RS 4430, Senior students will develop a poster presentation and submit the work to a professional society competition.	All students will receive a >80% at the completion of the poster and will place 1st, 2nd, or 3rd place at the ISRT conference.	5th Semester Faculty	n=21 2015=100% 2016=100% 2017=100% (n=20) 2018=100% 2019=100% (n=20)	Benchmark was met. ISRT = *Not held due to COVID *Note: students also competed at the ACERT competition 3rd place for investigational posters. Same evaluation as the previous measure. **Action:** Will continue to monitor

2. Students will advance professionally by joining state and national professional societies.	ASRT membership	All students will join the ASRT	Program Director	n=42 2016=100% 2017=100% (n=41) 2018=100% 2019=100% (n=41)	Benchmark was met. ASRT membership helps students stay connected to the national profession outside clinical and didactic settings. Engagement in the profession will lead to future development for both the professional and for the profession **Action:** 4th year of assessment. Will continue to monitor
	ISRT membership	All students will join the ISRT	Clinical Coordinator	n=42 2016=100% 2017=100% (n=41) 2018=100% 2019=100% (n=41)	Benchmark was met. ISRT membership helps students be engaged with the issues and topics of the local profession. Membership as students will lead to increased activity in the state society as working professionals who will advocate for patients and the profession in Idaho **Action:** 4th year of assessment. Will continue to monitor

Program Effectiveness Measures (1/1/2019-12/31/2019)					
Outcome	**Measurement Tool**	**Benchmark**	**Timeframe/Responsible Party**	**Results**	**Analysis/Action Plan**
1. Students will pass the national certification examination on the 1st attempt.	National Certification Exam 1st Time Pass Rates	100% each year	6 months post graduation (or upon completion by all) Program Director	2015: 100% (18/18) 2016: 80% (16/20) 2017: 100% (21/21) 2018: 100% (19/19)* 2019: 90% (19/21) 5 year average = 94%	Both 2019 and 5 year benchmark were not met. All students from the 2016 cohort passed the ARRT registry by the 2nd attempt; students from the 2019 cohort have not retaken the exam yet. Program faculty reviewed the scores of those who did not pass on the 1st attempt to analyze for patterns or deficiency in program curriculum and teaching, but no patterns or commonalities were identified. *In 2018, 1 student who completed the program did not take the ARRT exam. Will continue to monitor
2a. Students who are actively seeking a job will be gainfully employed within 6 months post-graduation.	Graduate Survey Or "word of mouth" On line Alumni Survey	75% or higher yearly 75% 5 year average	post graduation survey Program Director/Clinical Coordinator	2015: 100% (18/18) 2016: 100% (20/20) 2017: 100% (21/21) 2018: 100% (20/20) 2019: 100% (21/21) 5 year average = 100%	Benchmark was met in 2019 and for the 5 year average.
2b. Job Placement Rate **1 year from graduation** for those actively seeking a job.	Graduate Survey or "word of mouth" On line Alumni Survey	75% of those actively seeking employment within 12 months of graduation	12 months post graduation Program Director/Clinical Coordinator	2015: 94% (17/18) 2016: 100% (20/20) 2017: 100% (21/21) 2018: 100% (18/18) 2019: 100% (21/21) 5 year average = 99%	Benchmark was met in 2019 and for the 5 year average.
3. Students will complete the program.	Graduation roster	100%	End of program Program Director	2015: 100% (18/18) 2016: 100% (20/20) 2017: 100% (21/21) 2018: 95% (20/21) 2019: 100% (21/21)	Benchmark for 2019 was met.
4. Graduates will be satisfied with their education by feeling prepared for their 1st job.	Graduate Exit Survey	≥ 4 (5 point scale)	Graduate Alumni Survey Program Director	n=21 2016: 4.75 (n=20) 2017: 4.43 (n=21) 2018: 4.54 (n=11) 2019: 4.95 (n=21)	Benchmark met. An online survey was used for 2018, which may have decreased the response rate. Using a paper survey at the senior luncheon may increase the response rate

5. Employers will be satisfied with the performance of newly hired technologists	Employer Survey	≥ 4.0 (5point scale)	12 months post graduation Program Director	2015: 4.3 (n=3) 2016: 4.3 (n=3) 2017: 4.7 (n=3) 2018: 4.5 (n=2) 2019: 5 (n=2)	Unknown response. More emphasis and follow-up communication will be used in the future. Starting in 2018 respondents were able to complete surveys online, but has not yet increased the response rate.
6. Faculty will review curriculum yearly.	Documentation in advisory committee meeting minutes or during JRCERT self study phase.	100% each year	Fall Semester Program Director	2016: yes 2017: yes 2018: yes 2019: no	The faculty continue to review the curriculum yearly. However, due to the COVID-19 pandemic, there was no April 2020 Advisory Committee meeting, so the review was not documented.