

Radiologic Science Degree Completion Program

2012-2013 Assessment Report

- I. Introduction**
- II. Mission, Objectives, and Student Learning Outcomes**
 - a. Radiologic Science Degree Completion Program Mission Statement**
 - b. Program Objectives**
 - c. Student Learning Outcomes**
- III. SLO Three Year Assessment Cycle**
- IV. 2012-2013 Assessment Activities**
 - Winter 2013 Assessment Activities: SL0 #1**
 - Winter & Spring 2013 Assessment Activities: SL0 #2**
 - Fall 2012 Assessment Activities: SL0 #6**
- V. Summary of Student Learning Outcomes**
 - Appendix A: PSLO-Curriculum Matrix**
 - Appendix B.** MRI test questions and results by category
 - Appendix C.** MRI: Student evaluation comments.
 - Appendix D.** Self-reported student's experience on externship in MRI.
 - Appendix E.** Cardiovascular Interventional Technology anecdotal student reports.
 - Appendix F.** BIO 335 *Cross Sectional Anatomy* anecdotal student reports.

**Oregon Institute of Technology
Medical Imaging Technology Department
Radiologic Science Degree Completion Program Assessment
2012-13**

I. Introduction

The Radiologic Science (RDSC) Degree Completion Program began in 1996 and is one of four degree completion programs offered by the Department of Medical Imaging Technology at Oregon Institute of Technology.

The structure of the program allows registered radiologic technologists (RT) to pursue their Bachelor of Science degrees without coming to campus. This is accomplished by using the medical facilities where students are employed (or of their choice) as sites for temporary clinical practice, to fulfill the requirements of courses with labs, and the external capstone course, RDSC 411.

Eighty-nine credits are granted for the core radiography curriculum for registered technologists in good standing with the American Registry of Radiologic Technology (ARRT). A 62 credit block of math, communications, science, and remaining general education credits are taken from Oregon Tech for courses available online, or at a college in the student's locale. The remaining block of 50 credits is taken online from Oregon Tech.

During the early years of the program enrollment was slow, with little increase. The creation of a dedicated distance education office was greatly beneficial in promoting the program. From the Fall of 2002, through the Fall of 2007, the number of students coming into the program were 8, 8, 8, 12, 25, and 29, respectively. The number of graduates from 2002 through 2006 were 1, 2, 3, 1, and 4, respectively. As of spring, 2011, eight were notified of being eligible to graduate.

II. Mission, Objectives, and Student Learning Outcomes

Radiologic Science Degree Completion Program Mission Statement:

The mission of the Radiologic Science Degree Completion Program is to provide ARRT registered Radiologic Technologists a Bachelor of Science degree from a distance education program that furthers the student's knowledge, clinical practice, and performance of examinations while practicing competent patient care and safety in the advanced modalities of Radiologic Technology.

Program Objectives:

1. Maintain a degree completion curriculum with emphasis on special modalities.
2. Provide a BS degree in Radiologic Science with a core of courses directly applicable to the technologist-student seeking advancement or a leadership role in the profession.
3. Further the distance student's practice of providing compassionate healthcare in the clinical setting
4. Prepare graduates to obtain positions in the advanced modalities, management, sales, applications, education, and other career options available to Bachelor of Science degree graduates.
5. Place students in the clinical setting of various modalities, enabling them to gain hands-on experience and form new networks.
6. Provide a quality degree program that recognizes the achievement of passing the national registry.
7. Address quality of healthcare issues through the continued learning of working professionals.
8. Provide a meaningful capstone experience in one or more advanced imaging modalities.

Student Learning Outcomes:

1. Demonstrate knowledge of concepts & principles associated with the operation of special modality imaging machines & equipment.
2. Identify arteriographic anatomy and cross sectional images of the head, neck, and torso, for specific accuracy and spelling.
3. Demonstrate magnetic field precautions and radiation safety for self, staff, and patients as set forth by the ALARA standards.
4. Demonstrate professional judgment and appropriate interpersonal communication with colleagues and superiors.
5. Perform clinical examinations in Computed Tomography, Magnetic Resonance, Arteriography, and Mammography or Quality Assurance at the level of competency.
6. Identify major disease processes diagnostic to advanced modality examinations

III. SLO Three Year Assessment Cycle

A three-year cycle for the assessment of the program’s student learning outcomes is shown below in Table 1.

Radiologic Science Outcome Assessment	2013-2014 Term/Course	2014-2015 Term/Course	2015-2016 Term/Course
1. Demonstrate knowledge of concepts & principles associated with the operation of special modality imaging machines & equipment (Alternates: CT, Mamm, QA)	S CIT		W MR
2. Identify arteriographic anatomy and cross sectional images of the head, neck, and torso, for accuracy and spelling.	F 335		S CIT
3. Demonstrate magnetic field precautions and radiation safety for self, staff, and patients as set forth by the ALARA standards. (Alternates: CT, CIT, Mamm)		W MR	
4. Demonstrate professional judgment and appropriate interpersonal communication with colleagues and superiors.		F 411	
5. Perform clinical examinations in Computed Tomography, Magnetic Resonance, Arteriography, and Mammography or Quality Assurance at the level of competency		S 411	
6. Identify major disease processes diagnostic to advanced modality examinations	W Rad path		F Patho

Table 1. Three year Assessment Cycle

IV. 2012 – 2013 Assessment Activities

Radiologic Science degree completion faculty conducted formal assessment of three student learning outcomes during 2012-13.

Student Learning Outcome #1. Demonstrate knowledge of concepts & principles associated with the operation of special modality imaging machines & equipment.

Direct Assessment: Winter 2013, RDSC 356 MRI. A sampling of the final exam questions were grouped by the *performance criteria* topics listed in Table 2. Due to the small sample size, data from the last assessment of these questions was brought forward to better establish validity. The results in parenthesis are the percentage of students who answered correctly in 2007 when 7 students were enrolled. The top number is this year's class of 4.

Performance Criteria	Assessment Methods	Measurement Scale	Minimum Acceptable Performance	Results
MRI final exam questions	All questions from Final exam of RDSC 356	% of students correctly answering representative questions	75% average of 100 questions	86.5% (79.2)
T1 group	Questions from Final exam of RDSC 356	% of students correctly answering categorized questions	75% average of 4 questions	81.25% (78.6%)
T2 group	Questions from Final exam of RDSC 356	% of students correctly answering categorized questions	75% average of 3 questions	25% (23.8%)
Spin echo pulse sequence group	Questions from Final exam of RDSC 356	% of students correctly answering categorized questions	75% average of 6 questions	83.3% (78.6%)
Pulse sequences group	Questions from Final exam of RDSC 356	% of students correctly answering categorized questions	75% average of 6 questions	69% (69%)
TR, TE, TI	Questions from Final exam of RDSC 356	% of students correctly answering categorized questions	75% average of 5 questions	80% (74%)
Coils: shim, gradient, RF probes group	Questions from Final exam of RDSC 356	% of students correctly answering categorized questions	75% average of 13 questions	77% (91%)

Table 2. Assessment Results for SLO #1, Winter 2013, MRI in contrast to last assessment (in parenthesis)

Indirect Assessment #1. Appendix C. MRI: Student evaluation comments. Collected from the distance education department's evaluation of courses and faculty.

Indirect Assessment #2. Appendix D. Progress from a self-reported student's experience on externship in MRI.

Strengths: Percentages in all categories were higher or remained the same but the coils group. No negative comments regarding the construction or delivery of the course were excluded from Appendix C, while those included demonstrate satisfaction. Excerpts from a student's narrative (Appendix D) of her experiences in MRI over two terms shows the rigor of the course, but also shows the student's growth in her skills and confidence.

Weaknesses: The T2 group is clearly deficient. The pulse sequences group remained the same, below the minimum acceptable performance.

Plans for Improvement: This course is slated for major revisions by next winter term. A new text is being adopted and the course will be put into a modular format with more review questions added to each module. Special attention will be given the weak areas reported here, especially T2 relaxation.

Student Learning Outcome #2. Identify arteriographic anatomy and cross sectional images of the head, neck, and torso, for accuracy and spelling.

Two courses address this outcome directly: five units in Cross Sectional Anatomy, and one unit in Cardiovascular Interventional Technology.

Direct Assessment #1: Spring 2013, RDSC 336: Cardiovascular Interventional Technology. The last unit test of the course is dedicated to arteriographic anatomy. Matching questions from that test are image identification of arteriograms. Results are given as they are in the Blackboard analysis on the left, followed by a slash and the percentage correct this number reflects.

Performance Criteria	Assessment Method	Measurement Scale	Min. Acceptable Performance	Results
D2.54:	Multiple Choice	% correct	75%	1.0/ 100%
D4.46:	Matching	% correct	75%	4.0/ 100%
D1.29:	True/False	% correct	75%	1.0/ 100%
D1.23:	Multiple Choice	% correct	75%	1.0/ 100%
D1.22:	Multiple Choice	% correct	75%	1.0/ 100%
D2.53:	Multiple Choice	% correct	75%	1.0/ 100%
D1.21:	Multiple Choice	% correct	75%	1.0/ 100%
D2.52:	Multiple Choice	% correct	75%	1.0/ 100%
D1.49:	True/False	% correct	75%	1.0/ 100%
D5:	Multiple Choice	% correct	75%	1.0/ 100%
D5:	Multiple Choice	% correct	75%	1.0/ 100%
D5:	Multiple Choice	% correct	75%	1.0/ 100%
D1.28:	True/False	% correct	75%	1.0/ 100%
D2.51:	Multiple Choice	% correct	75%	1.0/ 100%
D5.Hand:	Matching	% correct	75%	5.0/ 83%
D5.Basilar:	Multiple Choice	% correct	75%	1.0/ 100%
D4.45:	Multiple Choice	% correct	75%	1.0/ 100%
D1.25:	Multiple Choice	% correct	75%	0.5/ 50%
D3.31:	Matching	% correct	75%	5.84/ 97%
D4.44:	Multiple Choice	% correct	75%	0.67/ 67%
D1.27:	True/False	% correct	75%	0.67/ 67%
D5.Aortic Arch:	Matching	% correct	75%	4.17/ 69.5%
D5.Abd. Aorta - Renals:	Matching	% correct	75%	4.84/ 80.6%
D1.50:	True/False	% correct	75%	0.84/ 84%
D5.Circle of Willis MRA:	Matching	% correct	75%	4.34/ 72%

Table 3. Assessment Results for SLO #2, Spring 2013, Cardiovascular Interventional Technology

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Unit 5 ave scores 2010	MC/Matching/TF	% correct	75%	96%
Unit 5 ave scores 2013	MC/Matching/TF	% correct	75%	92%

Table 4. Assessment Results for SLO #2, Cardiovascular interventional technology Spring 2010 and 2013

Strengths: The average of the test was 91.6%. The class average dropped by 4%, which is not a significant deviation.

Weaknesses: 2 MC, one T/F and 2 matching sets of questions dropped below the minimum acceptable performance. In addition a fortunate discovery resulted from data collection. Four questions were keyed incorrectly. The discovery was recently made for the test is the last in the course and just finished by all the students. The cause is unknown at this time. It is apparent that the questions were not keyed wrong last year, or the class average of 96% would have been unattainable. It appears that two pairs of questions were assigned duplicate answers sets, both of which were the same for each pair, and both of which were wrong. *Closing the loop* was accomplished immediately. The problem was reported, the instructor fixed the keys, and the students who took the test had their scores amended accordingly.

Plans for Improvements: The results of this data will be reported back to the instructor for consideration. If improvements in content are deemed necessary and changes are made they will be reported in closing the loop.

Direct Assessment #2: Winter 2013, RDSC 335: Cross Sectional Anatomy. Due to small class sizes cumulative data is being collected. In 2010 all three terms of unit test scores were combined for a total of 10 students to draw from. In the winter of 2013 twelve students were enrolled, bringing the total to a number beginning to establish validity: 22. The first percentage in bold is 2013. The percentage in parenthesis is 2010.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Unit 1 ave scores	short answer	% correct	75%	89.8 (93%)
Unit 2 ave scores	short answer	% correct	75%	95.1 (92.8%)
Unit 3 ave scores	short answer	% correct	75%	96.6 (88.8%)
Unit 4 ave scores	short answer	% correct	75%	93.3 (89.4%)
Unit 5 ave scores	short answer	% correctc	75%	93.15 (87%)

Table 5. Assessment Results for SLO #2, Spring 2013, compared to 2010.

Strengths: With the exception of the abdominal unit, every unit in cross sectional anatomy has improved and every unit had previously exceeded the benchmark by a considerable margin. This is not attributed to a change in content, though closing the loop from the last assessment result in better communication with the class, to get them off to a more successful start.

Weaknesses: None

Plans for Improvements: None

Indirect Assessment #1: Appendix E. Cardiovascular Interventional Technology (CIT) anecdotal student reports.

Indirect Assessment #2: Appendix F. BIO 335 *Cross Sectional Anatomy* anecdotal student reports.

Strengths: The anecdotal reports were gathered from discussions for CIT, and student evaluations and messages from Cross Sectional. No significant negative comments regarding the construction or delivery of the course were excluded from Appendix E or F.

Weaknesses: None perceived

Plans for Improvements: None

Student Learning Outcome #6. Identify major disease processes diagnostic to advanced modality examinations

Direct Assessment: Fall 2012, RDSC 336: Essentials of Pathophysiology.

Eleven questions from Test 2, relative to heart disease, were sampled and compared to the results of 2009 for the sake of cumulative data to add validity. Results for 2013 are first in bold, and '09 is in parenthesis. Asterisks indicate a deficiency reported in '09. Twenty four students were enrolled in 2013.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results in % correct answers
Test 2 ques. 23	MC	% correct	75%	74% (94%)
Test 2 ques. 40	MC	% correct	75%	91 (94)
Test 2 ques. 41	MC	% correct	75%	83 (64) *
Test 2 ques. 42	MC	% correct	75%	87 (82)
Test 2 ques. 43	T/F	% correct	75%	78 (64) *
Test 2 ques. 44	T/F	% correct	75%	87 (76)
Test 2 ques. 45	MC	% correct	75%	100 (100)
Test 2 ques. 46	MC	% correct	75%	83 (94)
Test 2 ques. 47	T/F	% correct	75%	78 (52) *
Test 2 ques. 48	MC	% correct	75%	78 (88)
Test 2 ques. 49	MC	% correct	75%	87 (88)

Table 6. Assessment Results for SLO #6, RDSC 336, Fall 2013, compared to 2009.

Twenty seven questions from Test 3 (multiple points in 4 matching questions) relative to pulmonary disease were sampled and compared to the results of 2009 for the sake of cumulative data to add validity. Results for 2013 are first in bold, and '09 is in parenthesis. Asterisks indicate a deficiency reported in '09.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
Test 3 ques. 2 (10 items)	Matching	% correct	75%	91 (33) *
Test 3 ques. 4	MC	% correct	75%	91 (100)
Test 3 ques. 5	MC	% correct	75%	96 (91)
Test 3 ques. 6	MC	% correct	75%	83 (91)
Test 3 ques. 7	T/F	% correct	75%	83 (83)
Test 3 ques. 8 (3 items)	Matching	% correct	75%	84 (50) *
Test 3 ques. 9	MC	% correct	75%	85 (66) *
Test 3 ques. 10	MC	% correct	75%	86 (75)
Test 3 ques. 11	MC	% correct	75%	96 (91)
Test 3 ques. 12 (4 items)	Matching	% correct	75%	83 (50) *
Test 3 ques. 13	MC	% correct	75%	66 (75)
Test 3 ques. 14 (2 items)	Matching	% correct	75%	85 (91)
Test 3 ques. 15	MC	% correct	75%	72 (91)

Table 7. Assessment Results for SLO #6, RDSC 336, Fall 2013, compared to 2009

Indirect Assessment (supplemental correlation)

In 2010-11 this SLO was sampled in the companion course to *Pathophysiology*, which is *Radiographic Pathology*. There were only 5 students in *Radiographic Pathology* at that time. They all did exceptionally well. Five 5 earned an A, and the lowest score on any of the eight, 50 point unit tests or the 200 point final was 84%. An indirect assessment was done on case study reports which also indicated that the objective was satisfied in that course. Correlation with *Pathophysiology* adds validity to the results from *Radiographic Pathology* for this SLO.

Strengths: The survey of test questions in tables 6 and 7 demonstrates stability of test results overall, with two notable exceptions. In 2009 seven questions fell below the minimum acceptable performance level. This was reported to the professor for her consideration, and all seven now exceed the acceptable limit by a significant margin overall.

Weaknesses: Secondly, three questions have dropped below 75%. Test 2 question 23 is only 1% below the cutoff but is a 20 point drop in the average score. Question 15 from test 3 is similar in that it is 3% below the margin but nearly a 20 point drop. The most problematic may be question 13 from test 3. It was on the border in '09 but is now below that.

Plans for Improvements: As with the last assessment, the results of this data will be reported back to the instructor for consideration. If improvements are deemed necessary and changes are made they will be reported in closing the loop.

V. Summary of Student Learning Outcomes

The program faculty conducted formal assessment of three student learning outcomes during 2012-2013.

Winter 2013, RDSC 356 MRI

Student Learning Outcome #1. Demonstrate knowledge of concepts & principles associated with the operation of special modality imaging machines & equipment

Strengths: Percentages in all categories were higher or remained the same but the coils group. Anecdotal student reports demonstrate satisfaction.

Weaknesses: The T2 group is clearly deficient. The pulse sequences group remained the same, below the minimum acceptable performance.

Plans for Improvement: Course made by next winter term will introduce a new text and format. Special attention will be given the weak areas reported here, especially T2 relaxation.

Spring 2013, RDSC 336: Cardiovascular Interventional Technology and Cross Sectional Anatomy

Student Learning Outcome #2. Identify arteriographic anatomy and cross sectional images of the head, neck, and torso, for accuracy and spelling.

Strengths: Scores in CIT remained stable, with some improvement and some decline in certain questions. Overall improvement was seen in cross sectional anatomy every unit exceeded the benchmark by a considerable margin.

Weaknesses: None

Plans for Improvements: To be determined by course faculty

Fall 2012, RDSC 336: Essentials of Pathophysiology

Student Learning Outcome #6. Identify major disease processes diagnostic to advanced modality examinations

Strengths: A marked improvement in previously problematic content was evident

Weaknesses: Three questions have dropped below 75%.

Plans for Improvements: To be determined by course faculty

VI. Changes Resulting From Assessment (summary of “closing the loop” items from this or last year)

MRI will be revised for the reasons described, but an additional topic, MRI safety, which was deemed lacking in the 2011-12 assessment of SLO #3 will be given additional attention. Questions in CIT have been corrected.

Appendix A
SLO-Curriculum Matrix

Student learning outcomes have been mapped to the curriculum as shown in Appendix A.

Course	Term	SLO 1	SLO 2	SLO 3	SLO 4	SLO 5	SLO 6
BIO 335 x-sec	3		X				
BIO 336 Patho	F						X
RDSC 326 CIT	S	X	X	X			
RDSC 354 Mamm	S	X		X			
RDSC 355 CT	F	X		X			
RDSC 356 MRI	W	X		X			
RDSC 365 QA	S	X					
RDSC 366 R path	S						X
RDSC 411 extern	3				X	X	

Appendix B. MRI test questions and results by category

Class size = 4. (in parentheses is the number of students who marked a correct answer for each question)

T1 – Q. 35(4), 36(4), 37(2), 48(3) Total 13/14= 81.25 vs 78.6%

T2 – Q. 19(2), 39(0), 40(1) Total 3/12= 25% vs 23.8%

Spin Echo Pulse Sequence – Q. 41(2),43(1),46(3),50(4),56(3),91(4) Total 20/24 = 83.3 vs 78.6%

Pulse sequences (RF pulse, diagrams) – Q. 42(2),54(2),63(4),95(4),96(3),99(3) Total 18/24 = 69%

TR, TE, TI – Q. 51(3),53(4),69(3),74(2),75(4) Total 16/20 = 80% vs. 74.3%

Coils-function of shim, gradient, RF probes (diagrams) – Q. 27(4),32(4),65(3),66(0),70(4),72(4),80(4),81(3),82(4),84(3),97(3),98(1)

Total 37/48= 77% vs 91%

Appendix C. MRI: Student evaluation comments

- Very good professor aided learning difficult technical ideas
- It was challenging, and informative. I felt the instructor really cared about my progress.
- this course was beneficial for my learning and advancement with my current employer.
- I learned a lot and Gary was very patient and understanding with my concerns.
- This course was very interesting
- If you read the chapters more than once for each test, like Mr. Zimmerman told you to, you can make it through the course.
- Further development of supplemental lectures (regarding helpful features) to give new perspectives on the books technical data.
- I am content as to how this course is presented and structured.
- I can't think of anything right now. (Regarding suggestions for improvement)

Appendix D. Progress reports following a student's progress on externship in MRI

This week has been interesting to me. I am doing my clinical rotation in MRI. I started on Tuesday after I worked my regular job. It was overwhelming because this is all new to me other than the course I took one year ago. I observed and participated in some exams including MRI of the head, lumbar spine and a multiple exam C,T and L spine with and w/o contrast. (that exam took a long time.) I can see that I will need to learn a lot but I am excited.

It was spring break for my kids so I only got a few hours in last week. I was able to work with my clinical coordinator and show him what I have learned so far. He was happy to see what I have learned. I am ready for a few more comps. I hope to get them this week.

I had a good week. I was complemented by my biggest critic. I started an IV on a patient who was difficult. It made me feel good. I also got another comp. so I will be turning in an evaluation soon.

Well, Where to begin. I have not been a very good pupil for my externship. I have been absent for nearly 2 weeks now. I have been taking care of sick kids and doctors visits. Next week is promising in my clinicals. I didn't know how hard this would be trying to fit in extra hours on top of my work schedule. It is dedication for sure.

This has been a good and productive week. I have 2 more comps. I am getting more confident with exams that require the power injector. I am getting more exams in like Breast, neck MRA and MRV, Pituitary.

This week was productive. I was able to see more exams than just MRI brains. I was able to do 2 knee MRI's and a shoulder. I think it is a little challenging getting the localizer images down so I can set up my next scan. Sometimes you have to be quick to get everything ready. Another challenge to learning is that all the techs do something different. So when you are scanning they may change the TR on every scan to cut down time (which is good) but I am getting confused when other techs don't do it. They just run the preselected protocols. I wish I could learn that way just to get it down and then learn to adjust TR as I get more proficient.

Last week was productive in the fact that I worked on my c-spines. I am close to being more confident in wanting to comp it. I feel that I can get a comp on a head MRI. I am just waiting for the right patient so I won't mess up. :) From experience, repetition really helps with getting all the basics down. When one thing does not go right it can mess you up when there is a lot of pressure (mainly on myself) to comp this exam. I hope to get it done this week.

This week ended well. I have been very stressed about my comps. I finally got one after 4 lumbar spines in a row. The repetition helped so much. Also I was not rushed by other techs because we were not busy and I was able to take my time. I definitely have a lot more comps to get but this week ended great. :)

This week has been productive. I practiced venipuncture. I have done venipuncture in the past but it has been a long time ago so I need more practice. I have observed/scanned a lot of MRI brains w and wo contrast as well as brains wo and MRA's this week. One tech made the comment that it's their bread and butter for exams. I think after a few more exams I may be ready to test my competency on MRI Brain. Other exams I participated in this week were L-spine, knee, pelvis for prostate and shoulders. I have gotten familiar with the 2 MRI scanners and the coils. I am enjoying learning this modality.

Appendix E. Cardiovascular Interventional Technology (CIT) anecdotal student reports

Week 5 anecdotal reports

* It was an interesting week in interventional. We did a port a cath placement, paracentesis, dialysis fistula de-clot, a PEG tube placement, a varicocele. The dialysis fistula de-clot and varicocele failed, for both they weren't able to get into the veins that they needed to. There was also a lot of bickering between the techs and the techs and doctor. It made for a very interesting work environment. I'm hoping that the coming week goes better.

* I have had a good week. I am finished with module two and working on three. I am still on the reading, but I have reviewed the power point, it is great.

I have had the opportunity to observe several studies this week, two hearts cath, an aortogram, and a peripheral runoff. We do runoffs in MRI but the detail pales in comparison; I was amazed with the process. I could not get too close to the monitors due to the doctors and staff in the control area, so I reviewed the images more closely on pac's afterward. It was very interesting listening to the Dr.'s discuss the case. The only circulation below the popliteal artery were collateral vessels. They were suggesting a fem-pop bypass. It would be interesting to follow this case, though I don't know if that is possible without HIPPA violations.

* I know! I can't believe week 5 is almost over. This term is definitely going faster for me. I'm appreciating the anatomy refresher as well and have found I refer to it quite a bit when I'm in the cath lab.

Week 7 anecdotal reports

*I missed clinical time this week, I caught the bug that has been running around town pretty heavy and it floored me. I missed out on getting to watch a catheter placement into the vessels of a tumor for chemo to be directly injected into the tumor. I really wish I could have seen that procedure. The reading is going well so far.

* I have also noticed how procedures and anatomy are coming together for me. That is pretty exciting, post processing CTA's. We have an RPA that does that for our CT department. The images are very impressive.

* This module has been particularly interesting for me. Really getting into the procedures and anatomy, I can associate them well with what I've been seeing at my clinical site. I finally got to observe some abdominal angiography, which they also did a limited peripheral study on. That was pretty neat and something different. Along the same lines, our hospital just opened an outpatient diagnostic clinic and I have had the opportunity to do some training with Siemens applications. One of the things they were training us to do on our new software was to "cut out" the abdominal aorta and accessory branches from an abdominal CT to create and 3D image of the vessels with no surrounding structures. It's different from the live images in the cath lab, but associated and pretty exciting nonetheless.

* Since part of Mod 3 covered cardiac, I've attached a fluoro film from when I had an atrial septal (Patent Foramen Ovale (PFO)) defect corrected at UC Davis MC.

The foramen ovale normally closes after birth. In a percent of the population it does not close. Mine showed it's face when I was 47 in the form of a couple TIA's. Diagnosis was made and verified by US cardiac echo (bubble test) both trans thoracic and trans esophageal. PFO's (in my case a Rt to Lt shunt) allow blood from Rt atrium to cross to Lt atrium without being filtered by the lungs. It is believed that emboli crossed over and went straight to the brain = TIA. Why at 47yo, no one could say.

The device implanted across the defect is an Amplatzer Occluder. Looks like a bird, right? Dr X (cardiologist) used a femoral venous approach. I tolerated the procedure without complication. Although, I did wake up and tried to sit up several times during the procedure. (A lot of) Fentanyl and Versed were used to attain conscious sedation. There was a bit of post procedure bleeding, as I remember waking up in my room with the male nurse applying extreme direct pressure to the Rt groin area. I'm all better now!

* Well...This week I was able to finish with Module 4 and take test 4 as well. So glad I was able to race ahead a bit, so that I am able to enjoy my wedding this weekend! The course is going quite well and I have been enjoying the material. I did however, as I always have, find that remembering the lesser vasculature is always more difficult than one would think! I'll have to keep working on that! Hope all is well with you all!

* I had thought that cath patients were sedated. That's not the case? Maybe it was contraindicated for this case. Interesting though. It is amazing to me that so many healthcare workers still smoke, even after seeing what it does to the body on a daily basis. Good luck on Mod 4.

* Thanks for sharing! That is very interesting, but I'm glad you're alright. I've not seen any structures like that in my radiographic experience yet, but now I'll know what it is if I do!

Appendix F. BIO 335 *Cross Sectional Anatomy* anecdotal student reports.

Dear Gary, After getting into blackboard I see that you have great notes and pics that would have helped me immensely with my test. I am new to blackboard and I don't always have access to a computer that is not intranet explorer only and I didn't see what you posted in the course materials. So I have got it figured out a little better and I feel my next test will go much better. I have printed out all your notes and I am studying away.

- I achieved the learning objectives stated in the course syllabus.
- The course contributed to my overall professional development.
- Gary seems to be passionate about what he teaches.
- I thought the course was successful.
- I liked the fact that all of the information that I learned will help me today and in the future with identification of anatomy. This is information that I can use everyday in my job. I enjoyed the class.
- Very friendly instructor, good communication. Made things very simple and clear
- I was satisfied about the overall layout and structure of the course.
- I think the course is set up perfectly, at least for my style of learning.
- I didn't find the text book to be a huge aid in my learning. I did OK just reviewing the materials provided in the blackboard section of the course and think the textbook was an unnecessary cost. My A&P book was a better resource for me than the book listed for this course.
- The course layout made it easy to navigate through the course.

Awesome, thank you so much for all of your assistance. My experience with OIT has been wonderful. I would recommend your college/program any time. You have been truly helpful and accommodating to all of my needs and questions for the past three years. Thank you again and please pass on to whomever I am one satisfied graduate from OIT!!