Oregon TECH

2019-20
Program Assessment Report Guide
Submission Deadline: October 31, 2020
to Office of Academic Excellence

This guide will show assessment coordinators the process of program assessment for 2019-20, including descriptions, examples and rubric measures for the annual program assessment report. Follow the guide description text in black while referencing the example text in blue and the rubric text in gray.

Section 1 – Program Mission

Describe the purpose of the degree program – why it exists and what distinguishes it from other units or programs. How is it aligned with the university's Core Themes (particularly Core Theme 1: Applied Degree Programs; and Core Theme 2: Student and Graduate Success)? This content will stay fairly static from year to year.

Program Mission: The mission of the Bachelor of Science in Nuclear Medicine and Molecular Imaging Technology (NMMIT) program at Oregon Institute of Technology is to prepare students to be successful in the field of Nuclear Medicine and Molecular Imaging. To be successful, graduates must demonstrate knowledge and skills that will allow them to be competitive in accessing employment, maintain their skills and abilities when employed, successfully pass the national registry examination in Nuclear Medicine, Computed Tomography, and/or Magnetic Resonance Imaging (MRI), and provide competent and compassionate care.

To support the Mission of the Bachelor of Science in NMMIT program at Oregon Tech, the program faculty have incorporated several courses to the curriculum to competitively differentiate our graduates and enhance their ability to be competitive in accessing employment. These courses include: Computed Tomography, MRI, and Mammography. In addition, students are encouraged to also enroll in the Advanced Computed Tomography and Advanced MRI courses offered in the Medical Imaging department during the Junior year. Faculty also develop and manage a cross section of clinical externship site opportunities for each student's fourth year of clinical training and education. These clinical externship opportunities are offered in a variety of geographical locations and hospital sizes to cater to diverse learning styles and to more effectively network graduates to employment opportunities.

Graduates from the NMMIT program secure employment in hospitals and clinics as working technologists in Cardiac clinics, general Nuclear Medicine departments, PET/CT and CT departments, and outpatient Radiology clinics. Some graduates go on to medical school, Physician Assistant school, or Masters degrees in Business or Health Care Management. Within 5-10 years from graduation, many graduates take on additional responsibilities within their organizations as clinical instructors, managers within Nuclear Medicine departments, or upper level management.

Mission Alignment: Virtually every lecture course within our curriculum incorporates a hands on, often project based learning environment attached to it. Students are often assigned a project or problem, and given opportunities to work individually or as part of a team, to address the problem or project. Often, these projects involve students interacting with the appropriate equipment in the lab such as gamma cameras, computers, well counters, dose calibrators, and thyroid probes, to provide hands on learning to solve problems. These exercises are designed to develop problem solving and critical thinking skills necessary in our industry.

The mission, objectives, and student learning outcomes for the NMMIT program are reviewed annually by the program and at the fall retreat during convocation. They are also reviewed annually by the Nuclear Medicine and Molecular Imaging Technology Advisory board.

Section 2 – Program Description and History:

This content will stay fairly static from year to year, and can be included in any reasonable order, but program enrollment, graduate, and employment, and (if applicable) board pass rates should be updated each year based on updated data.

- Program History
- Program Locations
- Program Enrollment
- Program Graduates
- Employment Rates and Salaries
- Board and Licensure Exam Results (if applicable)
- Industry Relationships
- Showcase Learning Experiences
- Success Stories – Descriptions of Successful Graduates (potentially including quotes from students highlight the programs' effective preparation)

The Nuclear Medicine and Molecular Imaging Technology program officially began in 1999 and is the only Nuclear Medicine and Molecular Imaging program in the state of Oregon. Enrollment trends from 2002-2020 have varied from initially 12 students, to consistently 18-20 students per year in the program. By fall term of 2020, there were 52 students enrolled in the program. For the graduating class of 2020, retention was (19/21) 90.5% and attrition was 10%. Attrition was the result of (2) students failing to pass two programmatic courses. However, (1) student came back into phase at one point during this time frame.

Program Location: **Klamath Falls Campus only for the didactic and laboratory education and training. Across the United States for the fourth year Clinical Externship education and training.**

Program Enrollment: 2016-2020

Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	5 Year Difference	5 Year % Change
49	53	56	53	52	3	6%

Program Graduates: Spring 2010-2020

2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
15	16	16	15	14	14	15	14	15	18	19

Employment Rates and Salaries: **2017-2019 (Data as of 10/11/20)**

Employed	Continuing Education	Looking for Work	Not Seeking	Median Salary	Success Rate
91%	6%	3%	0%	59,000	97%

Board Exam Results (if applicable):

American Registry of Radiologic Technology (ARRT)	
100% Pass Rate	Class of 2002-2020

Industry Relationships:

Oregon Tech Nuclear Medicine and Molecular Imaging Technology Advisory Board Meeting

Date: Friday, May 15, 2020

Committee Members

- Rick Hoylman, NMMIT Program Director (Zoom)
- Vanessa Bennett, Assistant Professor, NMMIT Program (Zoom)
- Wally Limbacher, Cedar Sinai, CA (Zoom)
- Suzie Hansen, Good Sam, Corvallis, OR (Zoom)
- Bert Marston, Providence, Portland, OR (Zoom)
- Benny Quang, Providence St. Vincent, Portland, OR (Zoom)
- Holly Rhodes, Sacred Heart, Eugene, OR (Zoom)
- Tim Herrington, Sacred Heart, Spokane, WA (Zoom)
- Beth Meysenburg, University of Washington, Seattle, WA (Zoom Video Conference)
- Kristine Hellige, Barnes-Jewish Hospital, St. Louis, MO (Zoom Video Conference)
- Kristen Mcbride, UC Davis, Sacramento, CA (Zoom video conference)
- Ryley McAllister, St. Alphonsus, Boise, ID (Zoom)
- Stacy Frazer, Good Samaritan, Puyallup, WA (Zoom)
- Brenda Craig, Parker Adventist, Parker, CO (Zoom)
- Kim Davis, St. Joseph, Bryan-College Station, TX (Zoom)
- Kaleb McCann, Salem Hospital, Salem, OR (Zoom)
- Ryan Gober, Sky Lakes Medical Center, Klamath Falls, OR (Zoom)

Notes on Discussion of Assessment Results

- Discussed COVID 19 updates for current and future externship students.
- Discussed weekly wrap up sessions between students and CIs and weekly communication.
- Discussed registry statistics and 100% pass rate as well as performance compared to national average. Also discussed employment rates and locations for 2019.
- Performed FERPA training for all clinical instructors.
- Discussed customizing the externship experience to the students' learning style and personality as much as possible.
- Discussed and provided a workshop on scoring the Professional Evaluation for students and how to use the Probation policy.
- Discussed the Clinical Competency policy and procedure.
- Discussed Modeling the Professionalism skills you require of students and shared examples of Professionalism assignments conducted on campus.
- Discussed how to challenge students' critical thinking and problem solving skills specifically related to image interpretation.
- Discussed developing a ListServ for all Clinical Instructors to share best practices.
- Discussed the significant role of the Clinical Instructor in the externship experience.

Showcase Learning Experiences

Success Stories – Descriptions of Successful Graduates (potentially including quotes from students highlight the programs' effective preparation)

100% pass rate on the National Registry Board Examination in Nuclear Medicine and Computed Tomography.
91% employment rate for 2017-2019.
2017-2019 Median Salary of $59,000.
Student Comments about the effectiveness of the Program's preparation:

Critical thinking, practical application in labs, in-depth understanding of each aspect of what we do.

Small class sizes with lots of hands on experience and training. The nuclear medicine professors truly care about their students and making sure we are successful. The externship experience is so valuable and made me feel prepared to step right into the working field after graduation.

Dedication to helping students thoroughly understand nuclear medicine

Rick and Vanessa expecting the best from us. This prepares us for the real world

The program wouldn't be what it is without the amazing professors that prepare us for the real world. Just the overall great foundation of knowledge and skills we gain before going out on to extern. We wouldn't be successful without the knowledge and support of the professors and the foundation they help us build.

Extern is amazing.

Section 3 – Program Student Learning Outcomes

NWCCU's standards for accreditation require that programs must "culminate in achievement of clearly identified student learning outcomes." (1.C.1.)

In this section, address the following:

- **PSLOs:** What are the 5-10 program student learning outcomes – the key skills, supported and scaffolded across the program, which graduates will need to be able to demonstrate by graduation in order to successfully pursue the professional directions described the program's mission statement?
  - Resources on Bloom's Taxonomy: http://oregonstate.edu/instruct/coursedev/models/id/taxonomy/#table
  - Resources on program student learning outcomes:
    - https://manoa.hawaii.edu/assessment/howto/outcomes.htm
    - https://www.jmu.edu/assessment/_files/How%20to%20Write%20Clear%20Objectives.pdf
    - https://www.jmu.edu/assessment/_files/Objectives%20Made%20Easy.pdf

PSLO #1. The student will demonstrate knowledge and application of radiation safety precautions and ALARA concepts by didactic examination and laboratory practical assessment.

PSLO #2. The student will demonstrate ethical reasoning through a variety of scenarios in lecture and lab, and adherence to professional responsibilities identified on their Professional Evaluation performed at the end of each term.

PSLO #3. The student will demonstrate knowledge and use of instrumentation in Nuclear Medicine by didactic examination and laboratory practical assessment.

PSLO #4. The student will perform nuclear medicine procedures using inquiry and analysis demonstrated on lab practical assessment.

PSLO #5. The student will demonstrate knowledge and uses of radiopharmaceuticals used in Nuclear Medicine by didactic examination and lab practical assessment.

- **Origin and External Validation:** How did the current set of program student learning outcomes originate? and/or when were Program Student Learning Outcomes last reviewed by program faculty? What sort of external

validation exists for the program student learning outcomes? When were program student learning outcomes last reviewed by the program's industry advisory board?

The faculty met several years ago to develop PSLOs for the NMMIT program. The faculty were asked to identify (9) PSLOs that that were specific and applicable to our program/industry. The faculty meet every fall to review the PSLOs and add/delete as appropriate. These PSLOs listed above were last reviewed by the NMMIT program faculty fall 2019 and will be reviewed again fall 2020 after school starts. The PSLOs were last reviewed by our Advisory Board in May 2020.

The primary external validation our program uses are (2) surveys we conduct at the end of each academic year. These surveys are sent to our clinical sites. One survey is sent to the student who is completing their clinical externship and fourth year of training, and the second survey, almost identical, is sent to the student's clinical instructor. Within each survey, we ask the student and clinical instructor to evaluate to what degree the student demonstrated knowledge and ability in a variety of skills, including each PSLO. As a program, we look not only at individual responses by student and site, but we look for trends with each PSLO for all students.

Changes: Have there been any changes to program student learning outcomes? If so, how were these arrived upon and why were these changes made?

The NMMIT faculty met last fall 2019 to discuss the value and benefit of our listed PSLOs. After some discussion regarding the relevance of the assessment data from the PSLOs previously, as well as the relevance and importance of the individual PSLOs, we decided to narrow our assessment focus to the (5) PSLOs listed above.

OREGON TECH PROGRAM ASSESSMENT REPORT RUBRIC (Section 4)			
1 – Beginning	**2 – Developing**	**3 – Good**	**4 – Exemplary**
Outcomes: Clarity			
No outcomes stated.	Outcomes present, but with imprecise verbs (e.g., know, understand; things that are not measurable because they are internal to the student), vague description of content/skill/or attitudinal domain.	Outcomes generally contain precise and measurable verbs, rich description of the content/skill/or attitudinal domain. Outcomes describe how students demonstrate learning.	All outcomes (except those explicitly mandated by an accrediting body) stated with clarity and specificity including precise and measurable verbs (for example, from Bloom's taxonomy) articulating how students demonstrate learning, with rich description of the content/skill/or attitudinal domain.
Outcomes: Student-centered orientation			
No outcomes stated in student-centered terms.	Some outcomes stated (either explicitly or implicitly) in student-centered terms.	All outcomes at least implicitly have a student-centered orientation.	All outcomes explicitly stated in student-centered terms (i.e., "Students will...").
Outcomes aligned with Mission/Industry/Student Success			
No discussion of external validation of outcomes.	At a superficial level, it appears the learning outcomes are aligned with industry needs, but	General detail about how outcomes relate to industry needs or is externally validated is provided, but lacks detail or specificity.	External validation of outcomes is clearly articulated, through reference to outcomes originating from external accreditors, industry advisory

	no explanation is provided.	Little to no evidence of recent discussions (either internally or with external partners) about the currency of program learning outcomes.	boards, employer surveys, etc. and reflect Oregon Tech's applied mission and reflect application of theory to practice. Evidence of recent program and external discussions about the continued relevance of learning outcomes.

Section 4 – Curriculum Map

NWCCU's standards for accreditation requires that programs must demonstrate "an appropriate breadth, depth, sequencing, and synthesis of learning" of student learning outcomes. (1.C.2)

- **Curriculum Map:** How are each of your program student learning outcomes (and institutional ESLO's) supported and scaffolded throughout the program's curriculum?

To address this, please complete a table with program's curriculum map, with identification of how each PSLO and ESLO appears within the curriculum at the Foundation (Introduction), Practice (Reinforcement and Application) and Capstone (Synthesis) levels.

Resources to Guide Creation of Curriculum Maps:
- https://manoa.hawaii.edu/assessment/howto/mapping.htm

This content should remain relatively static from year to year, but should be updated as the program curriculum map changes.

Nuclear Medicine & Molecular Imaging Technology B.S. Student Learning Outcomes Table

F – Foundation
P – Practice
C – Capstone

COURSE	PSLO 1	PSLO 2	PSLO 3	PSLO 4	PSLO 5	ESLO 1 Comm	ESLO 2 In & Acq	ESLO 3 Ethical Reason	ESLO 4 Teamwork	ESLO 5 Quant Lit	ESLO 6 Divers Persp
Wri 121,122 Sp 111						F					
Hum or Soc Scien							F				
SPE 221 (321)									F		

Chem 350											
Physics 217											
NMT 217 Patient Care		F						F			F
NMT 215 Rad Pharm	F			F	F					F	
NMT 212 Rad Physics											
NMT 205 NM Admin											
NMT 225 Instrum			F								
NMT 256 Cardiac											
NMT 311 Proc I						P				P	
NMT 312 Proc II	P	P		P			P	P			
NMT 367 PET/CT									P		
NMT 346 MRI											
BIO 346 PathoPhys											
NMT 355 C.T.											
NMT 313 Therapy											
NMT 325 Spect											
NMT 388 Ext Prep			P		P						P
NMT 410 Extern	C	C	C	C	C	C	C	C	C	C	C

OREGON TECH PROGRAM ASSESSMENT REPORT RUBRIC (Section 5)			
Outcomes are mapped to course/learning experiences and assessment plan			
1 – Beginning	**2 – Developing**	**3 – Good**	**4 – Exemplary**
No alignment of curriculum to outcomes.	Report contains a curriculum map connecting student experiences with some outcomes. Map is not	Report contains a curriculum map clearly illustrating how each outcome is supported within the curriculum.	Report contains a curriculum map illustrating how the curriculum as a whole supports scaffolded, vertical development (e.g., on a scale of 1-3, or introduction, development, mastery) for each outcome for both

	clear or difficult to interpret.		program outcomes (PSLOs) and institutional outcomes (ESLOs).
Program doesn't demonstrate alignment of course activity with program learning outcomes.	Program asserts that course activity is at least somewhat aligned with program outcomes and points to some evidence to support this.	Program points to some materials (e.g. course syllabi on the T:/ drive) that indicate meaningful and regular attention to program outcomes in course design, but does not demonstrate thorough and consistent alignment between class activity and program outcomes.	Program points to publicly available materials (e.g. course syllabi, assignments, unit learning outcomes, class materials) which demonstrate thorough and consistent alignment in all course of relationships between course activity and program learning outcomes.

Section 5 – Assessment Cycle

In this section, please complete a table to show which courses (and, where known, what assignments) are used to assess each PSLO and ESLO in a three-year cycle. (Although some programs may have compelling reasons to adopt a different cycle, assessment of program learning outcomes should follow a three-year cycle, with the intention that improvements prompted by one year's assessment should be designed and implemented during the two years prior to the next scheduled assessment of that outcome.)

Each PSLO should be assessed with **2 direct measures and 1 indirect measure** (the indirect measure is often the Student Exit Survey, which asks graduating students about each PSLO each year).

This content should remain relatively static from year to year, although it should be extended by at least one year (and the old year dropped off) each time a new report is submitted.

Outcome	2019-2020	2020-2021	2021-2022	2022-2023
PSLO 1: Radiation Safety	-Indirect Student Exit Survey -No Direct Assessment	Indirect Student Exit Survey Direct Assessment	Indirect Student Exit Survey	Indirect Student Exit Survey
PSLO 2: Ethical Reasoning	-Indirect Student Exit Survey -No Direct Assessment	Indirect Student Exit Survey	Indirect Student Exit Survey Direct Assessment	Indirect Student Exit Survey
PSLO 3: Instrumentation	-Indirect Student Exit Survey -No Direct Assessment	Indirect Student Exit Survey	Indirect Student Exit Survey Direct Assessment	Indirect Student Exit Survey
PSLO 4: Inquiry & Analysis	-Indirect Student Exit Survey -No Direct Assessment	Indirect Student Exit Survey Direct Assessment	Indirect Student Exit Survey	Indirect Student Exit Survey
PSLO 5: Use of R/Ps	-Indirect Student Exit Survey -No Direct Assessment	Indirect Student Exit Survey	Indirect Student Exit Survey	Indirect Student Exit Survey Direct Assessment
Outcome	**2019-2020**	**2020-2021**	**2021-2022**	**2022-2023**
ESLO: Communication	Indirect Assessment	Indirect Student Exit Survey	Indirect Student Exit Survey **Direct Assessment**	Indirect Student Exit Survey
ESLO: Ethical Reasoning	Indirect Assessment	Indirect Student Exit Survey	Indirect Student Exit Survey **Direct Assessment**	Indirect Student Exit Survey
ESLO: Teamwork	-Indirect Assessment **-Direct Assessment NMT 367**	Indirect Student Exit Survey	Indirect Student Exit Survey **Direct Assessment**	Indirect Student Exit Survey
ESLO: Inquiry & Analysis	Indirect Assessment	Indirect Student Exit Survey **Direct Assessment**	Indirect Student Exit Survey	Indirect Student Exit Survey
ESLO: Quanitative Literacy	Indirect Assessment	Indirect Student Exit Survey Indirect Assessment **Direct Assessment**	Indirect Student Exit Survey	Indirect Student Exit Survey
ESLO: Diverse Perspectives	Indirect Assessment	Indirect Student Exit Survey	Indirect Student Exit Survey	Indirect Student Exit Survey **Direct Assessment**

Current year's plan			
No activities/ courses listed for outcomes assessed during the current year	Activities/courses listed but link to outcomes is absent.	Most outcomes have classes and/or activities linked to them.	All outcomes assessed during the report year have classes and/or activities linked to them.
Multi-year cycle plan			
No formal assessment plan beyond current year.	Report contains a multi-year cycle outlining when assessment of all program student learning outcomes will occur.	Report contains a multi-year plan for assessment of learning outcomes, with courses identified for all assessment activities.	Clear, multi-year plan with several years of implementation (both past and future) outlined and clearly connected, with identification of courses and activities where assess will occur. Plan extends out at least far as the next assessment of any outcomes assessed during the report year.

Section 6-Assessment Activity

NWCCU's standards for accreditation require that institutions engage in "an effective system of assessment to evaluate the quality of learning in its programs" that "recognizes the central role of faculty in establishing quality, assessing student learning, and improving instructional programs." (1.C.5.)

In this section, address the following for each assessment activity conducted during the academic year covered by the report. This section may be integrated with Section 7 (Action Plans) and 8 (Re-assessment) as appropriate:

- **Activity**: What is the activity – (for a direct assessment, typically the course assignment) – used to assess this outcome? Describe in enough detail to make it clear how the activity is a reasonable measure of the outcome, and attach the assignment as an appendix. (Archiving the assignment is critical for consistent reassessment.)

- **Rubric**: How is the activity to be scored/evaluated? (Especially if scoring to assess the outcome is different from course grading). Describe in enough detail to makes it clear the rubric or scoring approach is a reasonable way to assess the outcome. Where a rubric is used, attach the rubric as an appendix. (Archiving the rubric is critical for consistent reassessment.)

- **Sample**: How many student artifacts were assessed? Was the population representative of the program as a whole? Were there any special or unusual characteristics of the student population that should be noted?

- **Reliability**: Who was involved in the scoring? How was consistency of rubric use assured? Have multiple faculty been involved in the scoring process to ensure reliability of the data? (Involving multiple raters for reliability is a best practice requested by NWCCU.)

- **Multiple Sites**: How is comparable assessment of this outcome carried out across all program sites? Although assessment processes do not need to be identical between different sites, the same measures should be assessed in comparable ways that facilitate exchange of ideas between program faculty at different sites.

- **Performance Target**: What was the target performance level? If less than 100%, why was the target performance level set at that point?

- **Performance Level**: What are the summary results? (i.e. What is the distribution of rubric scores?) What percentage of students exceeded the performance target? (Syu

- **History of Results**: Is there data from the previous assessment of this outcome, particularly if conducted with comparable methods? What trend(s) are seen in student performance over time?

- **Faculty Discussion:** How and when were results presented to and discussed by program faculty?

- **Interpretation**: What meaning or take-aways can be gleaned from this data? What are the factors, such as assignment design, course context, instructor, etc., that may have impacted student performance, either positively or negatively?

Indirect Self-Assessment All ESLOs: Student Exit Survey, NMT 410 Externship, Rick Hoylman & Vanessa Bennett					
N=15 students					
Performance Criteria & ESLO	**Assessment Methods**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results 2018-2019**	**Results 2019-2020**
How has your education and experience at OT contributed to your knowledge, skills, and personal development in these areas?	Self-assessment n Student Exit Survey.	-Very much -Quite a bit -Some -Very Little	80% of students scoring "Quite a bit" or better.	100%	100%
Communication: Writing				100%	100%
Communication: Speaking				100%	100%
Inquiry & Analysis				100%	100%
Ethical Reasoning				100%	100%
Teamwork				100%	100%
Quantitative Literacy				100%	100%
Diverse Perspectives				100%	100%

- **Activity**: This was a SurveyMonkey survey conducted in May 2020 with our senior externship students training in the hospital in their fourth year of education and training in our program. These students are living and training in hospitals all across the United States for eleven months and by May 2020, they are almost done with their externship and ready to graduate. Students were surveyed within (1) month of graduation from our program.

- **Rubric**: Students were indirectly assessed by "SurveyMonkey" survey instrument for each PSLO and ESLO, using a measurement scale. For the ESLOs, this measurement scale was: Agree very much, agree quite a bit, agree some, or agree very little. For the PSLOs, the measurement scale was to rate their proficiency with: High Proficiency, Proficiency, Some Proficiency, and Limited or no proficiency. For the PSLOs, the measurement scale was the same when asked "How much has your Oregon Tech experience contributed to your knowledge, skills, and personal development in the following PSLOs: High Proficiency, Proficiency, Some Proficiency, and Limited or No Proficiency. The minimum acceptable performance in each category was at least 80% of respondents responding with at least "Proficiency" for the PSLOs and at least "Quite a Bit" for the ESLOs.

- **Sample**: All fifteen Nuclear Medicine externship students were surveyed for a 100% response rate. All students were training at a different hospital with a different clinical instructor.

- **Reliability**: Two faculty in our program reviewed these data: myself and my colleague Vanessa Bennett.

- **Multiple Sites**: This assessment was consistent across all fifteen sites. Students from multiple sites were sampled at the same time using the same instrument.

- **Performance Target**: The target performance level was set at 80% of students responding with one of the two highest responses.

- **Performance Level**: 100% of students exceeded the desired performance level.

- **History of Results**: These data were compared with the previous year, 2018-2019. The performance was identical.

- **Faculty Discussion:** Results were shared with the one other faculty member in June/July 2020.

  Interpretation: I can identify no factors that negatively impacted these results. The students were sampled at the end of their externship training and education for the degree. The results were not viewed until after these students graduated. The data overwhelmingly indicate that students believe themselves to be proficient or highly proficient regarding all ESLOs and PSLOs and that Oregon Tech contributed significantly to their proficiency.

Indirect Self-Assessment All PSLOs: Student Exit Survey, NMT 410 Externship, Rick Hoylman & Vanessa Bennett					
All PSLOs: N=15					
Performance Criteria & PSLOs	**Assessment Methods**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results 2018-2019**	**Results 2019-2020**
Q BNUMC 1:Rate your Proficiency in the following areas.	Self-assessment on Student Exit Survey.	-High Proficiency -Proficiency -Some Proficiency -Limited Proficiency	80% of students scoring Proficiency or higher.	100%	100%
PSLO #1				100%	100%
PSLO #2				100%	100%
PSLO #3				100%	100%
PSLO #4				100%	100%
PSLO #5				100%	100%
Q BNUC 2: How has your experience at OT contributed to your knowledge, skills, and personal development in these areas?	Self-assessment Student Exit Survey.	-Very much -Quite a bit -Some -Very Little	80% of students scoring "Quite a bit" or higher.	100%	100%
PSLO #1				100%	100%
PSLO #2				100%	100%
PSLO #3				100%	100%
PSLO #4				100%	100%

PSLO #5				100%	100%

Same as above for ESLO data.

Indirect Clinical Instructor Assessment All ESLOs: Clinical Instructor Exit Survey, NMT 410 Externship, Rick Hoylman & Vanessa Bennett					
N=9 Clinical Instructors					
Performance Criteria & ESLO	**Assessment Methods**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results 2018-2019**	**Results 2019-2020**
How has your student's education and experience at OT contributed to their knowledge, skills, and personal development in these areas?	Clinical Instructor Assessment of Student Exit Survey.	-Very much -Quite a bit -Some -Very Little	80% of students scoring "Quite a bit" or better.	Not performed	
Communication: Writing				-	88.88%
Communication: Speaking				-	77.77%
Inquiry & Analysis				-	77.78%
Ethical Reasoning				-	100%
Teamwork				-	100%
Quantitative Literacy				-	88.89%
Diverse Perspectives				-	100%

- **Activity**: This was a SurveyMonkey survey conducted in May 2020 with our clinical instructors training our students in the hospital in their fourth year of education and training in our program. These clinical instructors mentor and oversee the student's training and education in each student's hospital all across the United States for eleven months. Clinical instructors were surveyed within (4) months following graduation.

- **Rubric**: Clinical instructors were indirectly assessed by "SurveyMonkey" survey instrument for each PSLO and ESLO, using a measurement scale. For the ESLOs, this measurement scale was: Agree very much, agree quite a bit, agree some, or agree very little. For the PSLOs, the measurement scale was to rate their proficiency with: High Proficiency, Proficiency, Some Proficiency, and Limited or no proficiency. For the PSLOs, the measurement scale was the same when asked "How much has your student's experience at Oregon Tech contributed to their knowledge, skills, and personal development in the following PSLOs: High Proficiency, Proficiency, Some Proficiency, and Limited or No Proficiency. The minimum acceptable performance in each category was at least 80% of respondents responding with at least "Proficiency" for the PSLOs and at least "Quite a Bit" for the ESLOs.

- **Sample**: Nine Nuclear Medicine Clinical instructors responded to the survey.

- **Reliability**: Two faculty in our program reviewed these data: myself and my colleague Vanessa Bennett.

- **Multiple Sites**: This assessment was consistent across all nine clinical sites. Clinical instructors from multiple hospitals in a variety of geographical locations and various sizes of hospitals using the same instrument.

- **Performance Target**: The target performance level was set at 80% of clinical instructors responding with one of the two highest responses.

- **Performance Level**: Clinical instructors responded that students met or exceeded the desired performance level of 80% of students scoring "Quite a bit" or better in all performance criteria except for *Communication (speaking)* (77.77%) and *Inquiry and Analysis* (77.78%)

- **History of Results**: There were no clinical instructor survey data for 2018-2019 to compare with.

- **Faculty Discussion:** Results were shared with the one other faculty member in June/July 2020.

- **Interpretation**: I can identify no factors that negatively impacted these results. The clinical instructors were sampled within 4 months of their students' graduation from Oregon Tech and completion of their externship. The results were not viewed until after these students graduated.
  The data overwhelmingly indicate that clinical instructors identified that Oregon Tech prepared at least 80% of students "Very much" or "Quite a bit" for each ESLO performance criteria regarding all ESLOs except for *Communication (speaking)* (77.77%) and *Inquiry and Analysis* (77.78%).

  Since we do not have data for comparison, we only have one data point to consider. However, we will share these data within our program and with our clinical instructors at large. We will identify more specifically, what area(s) of *Speaking Communication* and *Inquiry and Analysis* students are weakest in. Once we have these identified, we will address these issues in our curriculum this year (2020-2021), re-assess near the end of the year, and share these data with Clinical Instructors at our annual Advisory Board Meeting/Clinical Instructor Workshop in May 2021.
  We will continue to solicit input until we see these scores improve.

Indirect Clinical Instructor Assessment All PSLOs: Clinical Instructor Exit Survey, NMT 410 Externship, Rick Hoylman & Vanessa Bennett					
All PSLOs: N=9					
Performance Criteria & PSLOs	**Assessment Methods**	**Measurement Scale**	**Minimum Acceptable Performance**	**Results 2018-2019**	**Results 2019-2020**
Q BNUMC 1:Rate your student's Proficiency in the following areas.	**Clinical Instructor assessment** on Student Exit Survey.	-High Proficiency -Proficiency -Some Proficiency -Limited Proficiency	80% of students scoring Proficiency or higher.	None performed	
PSLO #1				-	100%
PSLO #2				-	100%
PSLO #3				-	100%
PSLO #4				-	100%
PSLO #5				-	100%
Q BNUC 2: How has your experience at OT contributed to your knowledge, skills, and personal	Clinical Instructor Assessment Student Exit Survey.	-Very much -Quite a bit -Some -Very Little	80% of students scoring "Quite a bit" or higher.	None performed	N/A

development in these areas? **These are clinical instructors and this questions is therefore, not applicable.**					
PSLO #1				-	N/A
PSLO #2				-	N/A
PSLO #3				-	N/A
PSLO #4				-	N/A
PSLO #5				-	N/A

- **Activity**: This was a SurveyMonkey survey conducted in May 2020 with our clinical instructors training our students in the hospital in their fourth year of education and training in our program. These clinical instructors mentor and oversee the student's training and education in each student's hospital all across the United States for eleven months. Clinical instructors were surveyed within (4) months following graduation.

- **Rubric**: Clinical instructors were indirectly assessed by "SurveyMonkey" survey instrument for each PSLO using a measurement scale. For the PSLOs, the measurement scale was to rate their proficiency with: High Proficiency, Proficiency, Some Proficiency, and Limited or no proficiency. The minimum acceptable performance in each category was at least 80% of respondents responding with at least "Proficiency" for the PSLOs.

- **Sample**: Nine Nuclear Medicine Clinical instructors responded to the survey.

- **Reliability**: Two faculty in our program reviewed these data: myself and my colleague Vanessa Bennett.

- **Multiple Sites**: This assessment was consistent across all nine clinical sites. Clinical instructors from multiple hospitals in a variety of geographical locations and various sizes of hospitals using the same instrument.

- **Performance Target**: The target performance level was set at 80% of clinical instructors responding with one of the two highest responses.

- **Performance Level**: Clinical instructors responded that students met or exceeded the desired performance level of 80% of students scoring at least 'Proficient'. Responses were 100% for each category.

- **History of Results**: There were no clinical instructor survey data for 2018-2019 to compare with.

- **Faculty Discussion:** Results were shared with the one other faculty member in June/July 2020.

- **Interpretation**: I can identify no factors that negatively impacted these results. The clinical instructors were sampled within 4 months of their students' graduation from Oregon Tech and completion of their externship. The results were not viewed until after these students graduated.
  The data overwhelmingly indicate that clinical instructors identified at least 80% of students were at least "Proficient" for each performance criteria.

  Since we do not have data for comparison, we only have one data point to consider. However, we will share these data within our program and with our clinical instructors at large. We will share these data with Clinical Instructors at our annual Advisory Board Meeting/Clinical Instructor Workshop in May 2021.

Direct Assessment #1 Teamwork ESLO: Klamath Falls Campus, NMT 367, Rick Hoylman and Vanessa Bennett					
Teamwork ESLO #4: NMT 367 Junior Level Course N= 9					
Performance Criteria	**Capstone Level**	**Results**			
Identify and achieve goal/purpose	80% of students Strongly Agree or Agree	100%			
Assume roles and responsibilities	80% of students Strongly Agree or Agree	100%			
Communicate Effectively	80% of students Strongly Agree or Agree	89%			
Reconcile disagreement	80% of students Strongly Agree or Agree	89%			
Share appropriately	80% of students Strongly Agree or Agree	89%			
Develop strategies for effective action	80% of students Strongly Agree or Agree	89%			
Cultural Adaptation	80% of students Strongly Agree or Agree	89%			

- **Activity**: This activity was assessed in the NMT 367 PET/CT (Positron Emission Tomography/Computed Tomography) course fall term 2019. Students were placed into groups and each group was assigned a particular PET/CT radiopharmaceutical. Groups were encouraged to research the current role and uses for each radiopharmaceutical assigned. Each group needed to prepare a 10-15 minute oral presentation describing the purpose, uses, and value of the radiopharmaceutical and each team member had to participate equally. The Oregon Tech Teamwork rubric was used for this assessment.

- **Rubric**: The ESLO 4 Teamwork rubric was used for this assessment.

- **Sample**: Nine Nuclear Medicine junior students responded to the survey for this assessment.

- **Reliability**: Two faculty in our program reviewed these data: myself and my colleague Vanessa Bennett.

- **Multiple Sites**: None.

- **Performance Target**: The target performance level was set at 80% of students responding with a (3) Practice Level or (4) Capstone level.

- **Performance Level**: 100% of students exceeded the desired performance level.

- **History of Results**: These data were compared with the previous year, 2018-2019. The performance was identical.

- **Faculty Discussion:** Results were shared with the one other faculty member in June/July 2020.

- **Interpretation**: The data indicate that each team of students worked well together in every category and exceeded our expectations.

OREGON TECH PROGRAM ASSESSMENT REPORT RUBRIC

1 – Beginning	2 – Developing	3 – Good	4 – Exemplary
Valid relationship between outcomes and assignment			
Seemingly no relationship between outcomes and assignment.	At a superficial level, it appears the assignment assessed by the measures matches the outcomes, but no explanation is provided.	General detail about how outcomes relate to assignment is provided. For example, the faculty wrote items to match the outcomes, or the instrument was selected "because its general description appeared to match our outcomes."	Narrative describes assignment and its alignment with outcomes, including providing the assignment in an appendix. Assignment appears to be a natural feature of the course and not inserted arbitrarily. Report describes assignment (including fit with class context) in sufficient detail to see that it is a natural feature of the course (not inserted arbitrarily) and is a reasonable way to assess that outcomes.
Valid relationship between outcomes and rubric			

Seemingly no relationship between outcomes and rubric. (No indication of rubric being used.)	At a superficial level, it appears that an appropriate rubric is used to assess the outcomes, but no explanation is provided.	Some detail concerning the rubric's appropriateness is provided, but description doesn't fully justify the appropriateness of the rubric to evaluation of the outcome and for the course context.	Rubric is provided and shows clear alignment between outcome and rubric elements. Detail provided regarding outcome-to-rubric match. Rubric is used to provide feedback to students (isn't totally disjoint from class goals and feedback).	
Types of Measures: 2 Direct, 1 Indirect				
No measures indicated	Most objectives are not assessed via direct measures (only with indirect measures).	Most objectives assessed with at least one direct measure and one indirect measure.	All objectives assessed using at least two direct measures (e.g., tests, essays) and one indirect measure.	
Alignment of assessment across sites/modes				
No discussion of alignment of assessment processes across sites.	Report includes data from all sites where the program is offered.	Reports includes data for each outcome from all sites where the program is offered.	Similar measures are used at all multiple sites/modes where program is offered. Differences in methodology between sites are clearly justified. [Or: Program is only at one site/mode.]	
Specification of desired results for objectives				
No desired results for objectives stated.	Statement of desired result in qualitative terms (e.g., student growth, comparison to previous year's data, comparison to faculty standards, performance vs. a criterion), but no specificity (e.g., students will grow; students will perform better than last year).	Desired result specified quantitatively (80% of our students will score a "Proficient" or "Highly Proficient" on rubric, our students will gain ½ standard deviation from junior to senior year). Desired result is not justified. ("Gathering baseline data" is acceptable for this rating.)	Desired result specified AND justified (e.g., "Last year the typical student scored 20 points on measure x. The current cohort underwent more extensive coursework in the area, so we hope that the average student scores 22 points or better.")	
Data collection and research design				
No information is provided about data collection process or data not collected.	Limited information is provided about data collection such as who and how many took the assessment. (e.g. term and number of students), but not enough to judge the veracity of the process.	Enough information is provided to understand the data collection process, such as a description of the sample size, scoring protocol (who scored student work), and course conditions (student motivation to participate). Nevertheless, methodological flaws are evident such as unrepresentative sampling.	The data collection process is clearly explained (e.g. term, number of students, and is appropriate to the specification of desired results (e.g., representative sampling, adequate motivation).	

Reliability evidence				
No additional psychometric or reliability data provided.	Report identifies process for scoring (e.g. identifies raters).	Reliability estimates (inter-rater comparisons) provided for some scores, or an externally validated rubric used. Reports states how efforts have been made to improve reliability (e.g., raters were trained on rubric).	Reliability (inter-rater comparisons) used for all scoring, with clear evidence of both internal agreement. Or, externally validated rubric used with trained scorers and inter-rater agreement. (Raw data provided in an appendix.)	
Presentation of results				
No results presented	Results are presented in summary form with respect to performance criteria. (e.g. "Students performance met our criteria.")	Results are presented, and they directly relate to the objectives and the desired results for objectives (e.g. 78% of students scored "Proficient" or "Highly Proficient," which fall below our desired results), but presentation is sloppy or difficult to follow. Statistical analysis may or may not be present. Raw data is not provided.	Results are presented, and they directly relate to objectives and the desired results for objectives, are clearly presented, and were derived statistical analyses, as appropriate. Raw data is provided in attachments.	
History of Results				
No results presented	Only current year's results provided.	Past iteration(s) of results provided for some assessments in addition to current year's.	Past iteration(s) of results (e.g., a prior year's) provided for majority of assessments in addition to current year's.	
Document how results are shared with faculty/stakeholders				
No evidence of communication of results to faculty and others.	Results from assessment provided to limited number of faculty or communication process with program faculty is unclear (not in minutes)	Results from assessment provided to all faculty, and mode (e.g. program meetings, e-mails) and details of communication are clearly described (The discussion highlights are documented).	Information provided to all faculty, mode and details of communication clear. In addition, information shared with others such as advisory committees, other stakeholders, or to conference attendees (discussion highlights documented along with additional assessment recommendations).	
Interpretation of results				
No interpretation attempted	Limited narration of results. Interpretation attempted, but the interpretation does not refer back to the objectives or desired results of objectives. Or, the interpretations are clearly not supported by the methodology and/or results.	Some narration of assessment analysis and results. Interpretation of results seem to be reasonable inferences given the objectives, desired results of objectives, and methodology (only reviewed by a single faculty member).	A complete and clear narration and analysis of the assessment results. Interpretations of results seem to be reasonable given the objectives, desired results of objectives, and methodology. Plus, multiple faculty interpreted results (not just one person). And, interpretation includes discussion of context: how classes/ activities might have affected results (Documents who reviewed the data and the comparison results between reviewers).	

8. Evidence of Improvement in Student Learning.

If this is an outcome being assessed on your standard schedule, did you have past results from this outcome? If this is a specifically scheduled "closing the loop" assessment, how do this year's results compare with the results that prompted improvements?

Student performance was almost identical to 2012-2013 when we last assessed Teamwork. Results for 2012-2013 were 88-100% compared to 2019-2020 89-100%.

Did you have past action plans? Can you say that data supports that those plans resulted in improvements?

No action plans were necessary or indicated for the Teamwork ESLO or the Indirect Assessment of the PSLO data.

Look backwards: Discuss the last time that outcome was assessed:

- Were changes recommended? None.
- Were those changes implemented?
- If so, was improvement seen?

The last time the ESLO for Teamwork was evaluated was in the 2012-2013 Assessment report. All results in 2012-2013 were within acceptable ranges. No additional changes needed to be implemented. Results for 2018-2019 were similar and consistent.

OREGON TECH PROGRAM ASSESSMENT REPORT RUBRIC			
Closing the loop			
1 – Beginning	**2 – Developing**	**3 – Good**	**4 – Exemplary**
Mention is made of past curricular or programmatic changes carried out in response to prior assessment data. No evidence is provided to evaluate whether these changes resulted in improvements in student learning.	Some evidence is presented to suggest improvement in student learning in response to program modifications. Evidence is vague and/or not clearly presented.	Evidence, from direct measures, suggesting learning curricular and/or pedagogical modifications, RE assessed, and found that student learning improved. Lack of clarity regarding the interventions or methodological issues (unrepresentative sampling, concerns regarding student motivation, etc.) leave legitimate questions regarding the improvement interpretation.	Strong evidence, from direct measures, supporting substantive and/or pedagogical modifications, RE-assessed, and found that student learning improved. The rationale and explanation of the modifications leading to the change are clearly laid out. The methodology is of sufficient strength that most reasonable alternative hypotheses can be ruled out (e.g., sampling concerns, validity issues with instrument or student motivation). In essence, the improvement interpretation can withstand reasonable critique from faculty, curriculum experts, assessment experts, and external stakeholders.

9. Data-driven Action Plans: Changes Resulting from Assessment

There were no Direct Assessment PSLOs scheduled for this year. However, we did perform Indirect Assessment on all PSLOs and all ESLOs using an end of externship, exit interview survey instrument that we conduct each year.

We do not have previous Indirect Student self-assessment or Indirect Clinical Instructor student assessment data to compare with at this time.

We sent one survey to each senior NMT 410 Externship student just prior to graduation. Although student self-assessment data may be helpful to some, we find it most helpful if we are able to identify 'trends' in one or more areas where we are preparing students well, and/or where we can improve teaching and evaluating PSLO and ESLO data.

In addition, we also sent the same survey instrument to their Clinical Instructors at each clinical site who have been each student's mentor and has overseen their fourth year, clinical education and training. This gives us (1) subjective, self-assessment response from each student, each year. It also provides us with (1) objective assessment by a professional in our industry who has spent the past eleven months supervising the student's clinical education and training.

In these surveys, we are seeking feedback regarding how well we prepared each student for the challenges awaiting them in our discipline and industry, and for Oregon Tech accreditation, PSLO and ESLO data specifically. We seek to identify areas we can improve as we identify data from site to site, and student to student.

The Indirect Student Self-Assessment for ESLO and PSLO data do not require action at this time. This is true of the Indirect Clinical Instructor Assessment of their senior externship student in the PSLO data. The data overwhelmingly indicate that clinical instructors identified that Oregon Tech prepared at least 80% of students "Very much" or "Quite a bit" for each ESLO performance criteria regarding all ESLOs except for *Communication (speaking)* (77.77%) and *Inquiry and Analysis* (77.78%).

Since we do not have data for comparison, we only have one data point to consider. However, we will share these data within our program and with our clinical instructors at large. We will identify more specifically, what area(s) of *Speaking Communication* and *Inquiry and Analysis* students are weakest in. Once we have these identified, we will address these issues in our curriculum this year (2020-2021), re-assess near the end of the year, and share these data with Clinical Instructors at our annual Advisory Board Meeting/Clinical Instructor Workshop in May 2021.
We will continue to solicit input until we see these scores improve.

For the Teamwork ESLO, 89-100% students responded that they agreed or strongly agreed that they performed adequately in each of the performance criteria. This compares favorably with the 2012-2013 data where results were 88-100% in each performance category.

OREGON TECH PROGRAM ASSESSMENT REPORT RUBRIC			
Weaknesses result in action plans			
1 – Beginning	**2 – Developing**	**3 – Good**	**4 – Exemplary**
Outcomes are identified, but no	Some areas where performance is below targets results in plans to	All areas where performance is lower than targets result in either (1)	All areas where performance is lower than targets result in either (1) plans to collect further data, (2)

improvement plans are outlined.	collect further data, program improvements, or assessment improvements.	plans to collect further data, (2) program improvements, or (3) assessment method improvements. [Or: no areas fall below performance thresholds.]	program improvements, or (3) assessment method improvements. Additionally, further opportunities for program improvement are identified, whether based that exceed performance targets but are still weak, or other inputs.
Action plans are linked to assessment findings			
No mention of any improvements to program, curriculum, or courses.	Examples of improvements documented, but they are poorly described, and the link between them and assessment findings is not clear.	Plans to improve) are documented and directly related to the findings of assessment. However, improvements lack close ties with specific assessment findings, lack details, or are developed simply based on "best intuition" of program faculty.	Plans to make program, curricular, or course improvements or plans to improve) are documented and clearly relate to findings of assessment (e.g. specific criteria that fall below desired performance levels). Improvements draw upon knowledge of best practices in the field to maximize likelihood of success and make sense in the context of a rational, vertically-designed curriculum.
Plans for improvement of assessment.			
No recommendations in improving the program assessment practices.	Some critical evaluation of past and current assessment practices, including acknowledgment of flows. Minimal or surface-level recommendations in improving the program assessment practices.	Critical evaluation of past and current assessment, including acknowledgement of flaws. Some evidence of recommendations for revision improving the program assessment practices.	Critical and specific evaluation of past and current assessment, including acknowledgement of flaws. Detailed recommendations for the improvement of the assessment practices in the program (changing methodology, collecting supplementary data, etc.) are outlined, drawing upon insightful and specific analysis of flaws in past assessment and best practices in academic assessment.
Accountability on improvement			
No information is there on how the modifications will be re-evaluated, when and by whom.	Incomplete information is included on implementation timelines, responsible parties, and re-assessment plans.	Most information on implementation plan is included (timeline, responsible parties, re-assessment schedule) is included.	All modifications include timeline for implementation, names of responsible parties, and identify when re-assessment will occur (whether at the next time the outcome comes up in the assessment cycle or sooner).
Planning/budgeting alignment.			
No attempt at aligning improvement plans with planning and budgeting processes. No recognition or discussion of resource needs to	Minimal or vague attempt at integrating improvement plans and planning and budgeting processes. (Acknowledgment that resources may be required, but doesn't specify or quantify then.)	Meaningful attempt at integrating improvement plans and planning and budgeting processes. Plan begins to quantify resource needs.	Clear and extensive improvement plan articulates needed resources and implementation plan explicitly feeds in to planning and resource request processes (e.g. staffing, equipment, etc.).

implement improvement plan.			