2017-2018 Program Assessment Report

Sleep Health A.A.S. Polysomnographic Technology Option

1. Mission, Objectives & Learning Outcomes

Oregon Tech Mission

Oregon Institute of Technology, an Oregon public university, offers innovative and rigorous applied degree programs in the areas of engineering, engineering technologies, health technologies, management, and the arts and sciences. To foster student and graduate success, the university provides an intimate, hands-on learning environment, focusing on application of theory to practice. Oregon Tech offers statewide educational opportunities for the emerging needs of Oregonians and provides information and technical expertise to state, national and international constituents.

Core Theme 1: Applied Degree Programs

Oregon Tech offers innovative and rigorous applied degree programs. The teaching and learning model at Oregon Tech prepares students to apply the knowledge gained in the classroom to the workplace.

Core Theme 2: Student and Graduate Success

Oregon Tech fosters student and graduate success by providing an intimate, hands-on learning environment, which focuses on application of theory to practice. The teaching and support services facilitate students' personal and academic development.

Core Theme 3: Statewide Educational Opportunities

Oregon Tech offers statewide educational opportunities for the emerging needs of Oregon's citizens. To accomplish this, Oregon Tech provides innovative and rigorous applied degree programs to students across the state of Oregon, including high-school programs, online degree programs, and partnership agreements with community colleges and universities.

Core Theme 4: Public Service

Oregon Tech will share information and technical expertise to state, national, and international constituents.

Program Alignment to Oregon Tech Mission and Core Themes

This program is designed to meet the needs of new technicians working in sleep centers across the country. The program meets one of five pathways for technicians sitting for the national registry exam: completions of a program accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). This distance education program is designed to meet the CAAHEP Committee on Accreditation for Polysomnographic Technology (CoA PSG) standards and the needs of place-bound technicians. The entire program is delivered online with local clinical facilities, near where the students are located, providing the clinical practicum.

Core Theme 1: Applied Degree Programs: We are dedicated to providing the highest quality education in the EMS industry as demonstrated through the caliber of our faculty, the tremendous success of our alumni, and the enthusiastic support of our EMS employers.

Core Theme 2: Student and Graduate Success: Our aim is to continue to partner with high potential students, from diverse backgrounds and perspectives, and assist them in becoming national EMS clinical and organizational leaders.

Core Theme 3: Statewide Educational Opportunities: We will continue supporting bold intellectual pursuits that advance and expand the EMS industry's comfort zone in order to improve and innovate both the quality of individual patient care as well as the systems of EMS care.

Core Theme 4: Public Service: We strive to partner with communities, industry, other colleges and universities, and private citizens to develop community-based solutions to community problems.

Program Mission

Sleep Health - Polysomnographic Technology option, an Associate of Applied Science degree program, provides instruction and clinical practice in a distance learning format. The program will prepare students to achieve professional proficiency and acquire professional credentials in sleep technology.

2. Program Educational Objectives

The education objectives of the Sleep Health - Polysomnographic Technology option are to:

1. prepare students for immediate employment anywhere in the United States in sleep technology

2. provide students with the skills to move into supervisor and patient education roles in sleep centers

Program Faculty Review

Program Student Learning Outcomes and Objectives were reviewed by program faculty during the annual AAST Meeting in Indianapolis in Fall 2018. Faculty review is an on-going process with frequent

phone/email communication between the Program Director and main faculty members.

3. Program Description and History

The program began in 2007 as the first national fully-online CAAHEP accredited program for polysomnography. Students take online didactic courses along with a part-time clinical rotation in an AASM accredited sleep lab in their local area. Students must complete a total of 540 clinical hours during the program per our CAAHEP accreditation, with 360 of the hours being completed during night shift.

Meeting with Advisory Board

Program faculty holds an annual meeting with their Advisory Board during Fall term each academic year. The minutes of the 2017 meeting are below:

Advisory Board Annual Meeting Minutes:

Polysomnographic Technology Program

Advisory Board Meeting 12/1/2017

***Attendance**: Tanya Breshears, Sharon Keenan, Jill Foster, David Panossian, Jane Perri, Michael Schwartz*

Missing: Janette Isaacson, Michele Gentile, Jamie Hall

Convened: 2:00 pm PST via a phone conference

Ended: 2:45 pm PST

Enrollment:

We are continuing to average 12 in the program with 2-4 graduating each 10 week quarter. We graduated 9 students in the 2016-2017 academic year. We are graduating 1 student this Fall but expect 5-6 graduates after winter 2018. We also have 6-7 probable new students starting winter 2018 this Jan.

One new CSH student (our first) has been admitted to start in Jan. We have 2 on-campus psychology students currently taking a CSH course as electives. We anticipate an increased in CSH applicants as the BRPT has formally ended its 1-day symposium as a pathway to take the CCSH exam.

We continue to have the largest phone and online requests from prospective students, more than any other program on campus, but the smallest actual enrollment. Efforts are being made to convert more of the inquiries to actual applicants. We have removed the requirement that they must speak to me, and instead we have added all of the information that I typically tell them to the web site and require that

they check off that they have read the material. I am making every effort to be in close phone communication with new admits.

Our main barrier to increased enrollment is difficulty obtaining clinical site agreements.

Our main competition regionally continues to be Linn Benton CC and more recently Concorde Career College in Portland. LBCC has reduced clinical hours in lieu of Sat dry labs 2x per month. Concorde is much more expensive than OIT.

Assessments:

Five of the 9 graduates from last year have taken the BRPT exam. All 5 passed on their first attempt. Those same 5 graduates have returned their survey after working for 1 month in a sleep lab. Program ratings were all "excellent" except 1 "very good". Program strengths were professionalism, number of clinical hours and doing the ISR scoring modules each month. Suggestions were mostly related to mask fit experience, advanced PAP titrations, and rotating through more than 1 sleep lab. Employer suggestions related to students having experience with more than 1 recording system and work on time management.

Future Focus:

We continue to await acceptance of a new Dental Hygiene Program Director. We have discussed the idea of offering Badges leading to certificate and AAS degrees in Clinical Sleep Health, and the courses have been approved. This would be a joint program with the Dental Hygiene Program. We discussed the idea of "badging" in industry and justification for offering the program. The committee last year voted to move forward on this program idea. Jane and Michael will revisit the idea next year.

CAAHEP:

In summer 2018, we will have our 10-year CAAHEP reaccreditation site visit at OIT.

Advisors Questions/Comments:

** DP asked about enrollment.*

** JF commented that she felt she could have benefited from more experience with advanced PAP modes.*

** JP asked who teaches RCP 120. I will find out and make sure there is enough instruction on advanced PAP modes.*

** SK asked about a student who was uncomfortable with online instruction. It seems to be an age-related issue as student is nearly 60 y/o.*

Next meeting: December 2018

Program Enrollment and Graduates

The Sleep Health – Polysomnographic option receives the most inquiries of any program in Distance Education. However due to the challenging aspect of night shift work, only a small percentage of inquiring students enter the program. The program offers rolling admission for all four academic terms.

Program enrollment continues to be stable. In the 2017-2018 academic year, five students graduated with a certificate, a 50% decrease. However, six students graduated with an AAS degree, a 50% increase. This change likely reflects the growing trend of states requiring those applying for licensure to hold not just national registry but also a degree. Two students are continuing on to earn a BS in Healthcare Management.


10 Year History By Major.pdf


Institutional Research Graduates

Employment Rates and Salaries

The average salary for a PSG Tech surveyed in 2017-2018 was $40,500. Nearly all PSG Techs receive a night shift differential. All students who graduated and passed their national registry exam reported to be working in the field.


Career Services Employment Rates a

Pass Rates on National Board Registry Exam

Data from the Board of Registered Polysomnographic Technologists (BRPT) from 2013 (most recent data available) show an exam pass-rate of 62% for people qualifying for the exam through BRPT pathway #3 (CAAHEP). In 2015-2016 and 2016-2017, the pass-rate for OIT graduates was 100%. For 2017-2018 program graduates who have sat for the national registry exam so far, the pass rate was 80%. The one student who failed nearly passed and plans to retake the exam soon.

https://brptportal.cobaltsaas.com/Public/Directory.aspx?selmenid=men6

4. Program Student Learning Outcomes

In spring of 2018, the BRPT made significant changes in the RPSGT exam blueprint. Therefore, PSLOs were revised and updated to reflect these changes.

PROGRAM STUDENT LEARNING OUTCOMES **Sleep Health A.A.S. - Polysomnographic Technology Option**
PSLO #1: Demonstrate the ability to review patient information and prepare for a polysomnogram.
PSLO #2: Demonstrate the ability to apply sensors correctly with acceptable impedances for data collection.
PSLO #3: Demonstrates ability to calibrate signals, document, and troubleshoot recording artifact.
PSLO #4: Demonstrates ability to accurately analyze and summarize adult PSG data.
PSLO #5: Demonstrates understanding of PAP and O2 theory, application and contraindications.
PSLO #6: Demonstrates knowledge of PAP therapy adherence, management, and patient education.

5. Assessment Map & Measures

F – Foundation – introduction of the learning outcome, typically at the lower-division level,

P – Practicing – reinforcement and elaboration of the learning outcome, or

C – Capstone – demonstration of the learning outcome at the target level for the degree

OIT -ASPT 2017-2018 **PSLO #1:** **Demonstrate the ability to review patient information and prepare for a polysomnogram.**	
Course/Event	Written Exam
Legend	C - capstone
Assessment Measure	Direct - written exam
Criterion	All students earn 70% or greater

Course/Event	Practical Exam
Legend	C - capstone
Assessment Measure	Direct – behavioral observation at practical exam
Criterion	80% of students score 3 or 4 out of 4
Course/Event	Students Exit Survey
Legend	C - capstone
Assessment Measure	Indirect – student exit survey
Criterion	80% of students score 3 or 4 out of 4

OIT -ASPT 2017-2018 **PSLO #2:** **Demonstrate the ability to apply sensors correctly with acceptable impedances for data collection.**	
Course/Event	Written Exam
Legend	C - capstone
Assessment Measure	Direct - written exam
Criterion	All students earn 70% or greater
Course/Event	Practical Exam
Legend	C - capstone
Assessment Measure	Direct – behavioral observation at practical exam
Criterion	80% of students score 3 or 4 out of 4
Course/Event	Students Exit Survey
Legend	C - capstone
Assessment Measure	Indirect – student exit survey
Criterion	80% of students score 3 or 4 out of 4

OIT -ASPT 2017-2018 **PSLO #3:** **Demonstrates ability to calibrate signals, document, and troubleshoot recording artifact.**	
Course/Event	Written Exam
Legend	C - capstone
Assessment Measure	Direct - written exam
Criterion	All students earn 70% or greater
Course/Event	Practical Exam
Legend	C - capstone
Assessment Measure	Direct – behavioral observation at practical exam
Criterion	80% of students score 3 or 4 out of 4
Course/Event	Students Exit Survey
Legend	C - capstone
Assessment Measure	Indirect – student exit survey
Criterion	80% of students score 3 or 4 out of 4

OIT -ASPT 2017-2018 **PSLO #4:** **Demonstrates ability to accurately analyze and summarize adult PSG data.**	
Course/Event	Written Exam
Legend	C - capstone
Assessment Measure	Direct - written exam
Criterion	All students earn 70% or greater
Course/Event	Practical Exam
Legend	C - capstone
Assessment Measure	Direct – behavioral observation at practical exam
Criterion	80% of students score 3 or 4 out of 4
Course/Event	Students Exit Survey
Legend	C - capstone
Assessment Measure	Indirect – student exit survey
Criterion	80% of students score 3 or 4 out of 4
Course/Event	Online ISR Scoring
Legend	P - practice
Assessment Measure	Direct - simulation
Criterion	All students earn 85% or greater on ISR for 3 types of sleep disorders

OIT -ASPT 2017-2018 **PSLO #5:** **Demonstrates understanding of PAP and O2 theory, application and contraindications.**	
Course/Event	Written Exam
Legend	C - capstone
Assessment Measure	Direct - written exam
Criterion	All students earn 70% or greater
Course/Event	Practical Exam
Legend	C - capstone
Assessment Measure	Direct – behavioral observation at practical exam
Criterion	80% of students score 3 or 4 out of 4
Course/Event	Students Exit Survey
Legend	C - capstone
Assessment Measure	Indirect – student exit survey
Criterion	80% of students score 3 or 4 out of 4

OIT -ASPT 2017-2018 **PSLO #6:**

Demonstrates knowledge of PAP therapy adherence, management, and patient education.	
Course/Event	Written Exam
Legend	C - capstone
Assessment Measure	Direct - written exam
Criterion	All students earn 70% or greater
Course/Event	Students Exit Survey
Legend	C - capstone
Assessment Measure	Indirect – student exit survey
Criterion	80% of students score 3 or 4 out of 4

6. Program Student Learning Outcomes Assessment Cycle

PROGRAM STUDENT LEARNING OUTCOMES **3-Year Cycle** **Sleep Health A.A.S. Polysomnographic Technology Option**	**2017-2018 Assessment Methods**	**2018-2019 Assessment Methods**	**2019-2020 Assessment Methods**
PSLO #1: Demonstrate the ability to review patient information and prepare for a polysomnogram.	Practical Written		
PSLO #2: Demonstrate the ability to apply sensors correctly with acceptable impedances for data collection.	Practical Written		
PSLO #3: Demonstrates ability to calibrate signals, document, and troubleshoot recording artifact.	Practical Written		
PSLO #4: Demonstrates ability to accurately analyze and summarize adult PSG data.	Practical Written Monthly ISR		
PSLO #5: Demonstrates understanding of PAP and O2 theory, application and contraindications.	Practical Written		
PSLO #6: Demonstrates knowledge of PAP therapy adherence, management, and patient education.	Written		

7. Methods for Assessment

Rubric for Scoring PSLO – Written Exam (Direct assessment at practical exam)

1 – Minimal Knowledge	2 – Some Knowledge	3 – Knowledgeable	4 – Highly Knowledgeable
Student scored 0% - 25% in measures of this PSLO on the written exam	Student scored 26% - 75% in measures of this PSLO on the written exam	Student scored 76% - 90% in measures of this PSLO on the written exam	Student scored over 90% in measures of this PSLO on the written exam

Rubric for Scoring PSLO – Practical Exam (Direct observation at practical exam)

1 – Minimally Competent	2 – Somewhat Competent	3 – Competent	4 – Highly Competent
Student scored 0% - 25% in measures of this PSLO on the practical exam	Student scored 26% - 75% in measures of this PSLO on the practical exam	Student scored 76% - 90% in measures of this PSLO on the practical exam	Student scored over 90% in measures of this PSLO on the practical exam

Rubric for Scoring PSLO – ISR Scoring (Direct – collected in clinical courses)

1 – Minimally Competent	2 – Somewhat Competent	3 – Competent	4 – Highly Competent
Student scored below 85% on ISR scoring for 3 PSG parameters	Student scored below 85% on ISR scoring for 3 PSG parameters	Student scored 85% or greater on ISR scoring for 3 PSG parameters	Student scored 85% or greater on ISR scoring for 3 PSG parameters

Rubric for Scoring PSLO – Student Exit Survey (Indirect – given at practical exam)

1 – Minimally Prepared	2 – Somewhat Prepared	3 – Prepared	4 – Highly Prepared
Student self-rated as “minimally prepared” in PLSO measure in exit survey	Student self-rated as “somewhat prepared” in PLSO measure in exit survey	Student self-rated as “prepared” in PLSO measure in exit survey	Student self-rated as “highly prepared” in PLSO measure in exit survey

OIT -ASPT 2017-2018 **PSLO #1:** **Demonstrate the ability to review patient information and prepare for a polysomnogram.**	
Criterion	Not Met (80% of Students score 3 or 4)
Summary	Only 70% of students met criteria for the direct assessment of "Understands basics of differential amplifiers". Only 70% of students met criteria for the indirect assessment of "Identifies hypnotic medication".
Improvement Narrative	To address the direct assessment, more emphasis will be placed on instrumentation in PSG 221. This is a challenging area as recording equipment becomes increasingly computerized. For the indirect assessment, students will be encouraged to review categories of sleeping medications more closely in PSG 291.

OIT -ASPT 2017-2018 **PSLO #2:** **Demonstrate the ability to apply sensors correctly with acceptable impedances for data collection.**	
Criterion	Met (80% of Students score 3 or 4)
Summary	Over 80% of students scored 3 or 4 in direct and indirect assessment.
Improvement Narrative	Students will continue to work hard in their clinical rotation to master these sensor-application skills and associated theories.

OIT -ASPT 2017-2018 **PSLO #3:** **Demonstrates ability to calibrate signals, document, and troubleshoot recording artifact.**	
Criterion	Not Met (80% of Students score 3 or 4)
Summary	Only 70% of students met criteria for the direct assessment of "Understands signal processing".
Improvement Narrative	This is probably the most challenging area for all new sleep technologists as signal processing has become so computerized. More emphasis will be placed on students understanding amplifier sensitivity and filtering as described in the Atlas of Clinical Polysomnography, vol 1.

OIT -ASPT 2017-2018 **PSLO #4:** **Demonstrates ability to accurately analyze and summarize adult PSG data.**	
Criterion	Met (80% of Students score 3 or 4)
Summary	Over 80% of students scored 3 or 4 in direct and indirect assessment.
Improvement Narrative	For this assessment, we primarily use the Inter-Rater Scoring (ISR) modules of the AASM. This has greatly helped to assess record scoring

	in a much more standardized way. As this is a new assessment measure, we simply used “greater than 85%” as meeting criteria.

OIT -ASPT 2017-2018 **PSLO #5:** **Demonstrates understanding of PAP and O2 theory, application and contraindications.**	
Criterion	Met (80% of Students score 3 or 4)
Summary	Over 80% of students scored 3 or 4 in direct and indirect assessment.
Improvement Narrative	Assessment of this area was strengthened this year by means of adding a practical component in which students must apply PAP masks and headgear to a volunteer. Students did very well with this.

OIT -ASPT 2017-2018 **PSLO #6:** **Demonstrates knowledge of PAP therapy adherence, management, and patient education.**	
Criterion	Met (80% of Students score 3 or 4)
Summary	Over 80% of students scored 3 or 4 in direct and indirect assessment.
Improvement Narrative	The relative importance of this area was greatly increased this year by the BRPT. Course material in PSG 291 was revised to reflect this change.

References

- Program Assessment Coordinator: Michael Schwartz, Program Director, Sleep Health
- Office of Academic Excellence

AR DATA 2017-2018.xlsx

*Exam hard copies on file with Program Director.

8. Evidence of Improvement in Student Learning.

Closing the Loop from 2016-2017

Program Faculty implemented actions during the academic year based on assessment findings from previous assessment cycles. We have gathered assessment data following changes that indicated further action is needed.

Changes Implemented

In last year's assessment, ECG arrhythmia recognition was notably poor: only 22% met acceptable criteria in direct assessment. This lead to discussions about how/where we could provide more educational focus on this area. The ECG section in PSG 231 Sleep Pathology was enhanced with extra learning modules.

Sleep Techs are increasingly encountering higher acuity patients in the outpatient sleep center setting, many of whom require advanced bi-level PAP modes (e.g., ASV and other NIV modes). Students are now focusing more on this area in their clinical rotations.

In spring 2018, the BRPT updated their RPSGT exam blueprint. For this reason, all PSLOs were reviewed and updated as needed. Changes are reflected in this year's assessment report.

Assessment Findings

ECG arrhythmia recognition scores have improved significantly. 80% of students met acceptable criteria of scoring a 3 or 4 out of 4 in direct assessment. In addition, 80% of students met acceptable criteria of scoring a 3 or 4 out of 4 in INDIRECT assessment.

Concerning advanced PAP modes, 90% of students met criteria of 3 or 4 in direct assessment in this area. Indirect assessment scores are also fairly strong for understanding PAP modes. We will watch this knowledge area closely in future assessments.

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

The education objectives of the Sleep Health - Polysomnographic Technology option are to:

1. prepare students for immediate employment anywhere in the United States in sleep technology

2. provide students with the skills to move into supervisor and patient education roles in sleep centers

As students continue to pass the national registry exam at above-national rates, the Sleep Health – Polysomnography Option program is meeting expectations. Additionally:

- Key program faculty are active in the field professionally
- Students provide mostly positive experiences on exit surveys
- OIT is a nationally-recognized institution of excellence and a draw for students wanting to excel in the field with an AAS or BS degree.

At this time, no significant modifications are required in the delivery of the program to students.

In discussion with key faculty, we will consider expanding the ISR assessment to measure each of the three main PSG scoring parameters (staging, respiration and limb movements) separately and modify the rubric accordingly.