



**2015-2016 CSCI EETF Assessment Year End Report, June, 2017**

Program Name(s)	EETF Faculty Rep	Department Chair
Biostatistics MS	Lynn Eudey	Lynn Eudey (Interim)

[NOTE: Items A, B, C, and D are identical to your Page 2 on your Annual Report for CAPR. Please simply cut and paste from there. Item E is unique to the CSCI EETF.]

**A. Program Student Learning Outcomes**

Student learning outcomes for MS in Biostatistics are:

1. Apply biostatistical methods to data, including (a) descriptive statistics, probability and graphical displays, (b) distributions, hypothesis testing and confidence intervals, and (c) uncertainty, likelihood, modeling and error analysis;
2. Derive basic theory and communicate to others results involving biostatistical data analysis;
3. Formulate problem solutions, produce appropriate computer code and to interpret results.

**B. Program Student Learning Outcome(s) Assessed**

For MS in Biostatistics we assessed SLO's 1, 2, and 3

**C. Summary of Assessment Process**

We have long used the culminating experience of the Comprehensive Examination along with feedback from alumni and community industry leaders in assessing our programs. Student learning outcomes and institutional learning outcomes were previously identified and mapped to specific courses for all three programs (in Spring 2014, refer to program curriculum maps).

This year we implemented quantitative assessment of the results of our Comprehensive Examination by mapping all but one of the SLO's for each of the MS programs to specific course problems on the MS exam. The comprehensive examination has a common (to both programs) 4-hour closed book examination and, four days later, program-specific 4-hour open book examinations. Questions on the examinations are identified with the required graduate courses. Rubrics were established for the outcomes and implemented.

The SLO that was not evaluated by the Comprehensive Examination involve communication skills is SLO #2 for Biostatistics MS. It was decided that this SLO is better addressed by term projects that involve communication (either a written project or presentation that is worth considerable weight in the grading scheme of the course). For Biostatistics MS SLO #2, BSTA 6653 “Clinical Trials in the Pharmaceutical and Biomedical Industries” is used for assessment. This year the rubric was implemented.

All implementations of academic assessment took place after the last faculty meeting of the academic year, hence faculty review and any changes to the curriculum will be done in the future. We anticipate that any changes we decide upon will be implemented within the semester system.

#### D. Summary of Assessment Results

Our comprehensive examination is our primary method of assessing both master’s degree programs. The tests are written to test knowledge from the required core courses for each program. Typically our pass rate is 75% or higher. As of Spring 2016, combined over the past few years, the average pass rate for Statistics MS is 79% (SD = 16%) and for Biostatistics MS is 75% (SD = 24%). For Spring 2017 the pass rate for Biostatistics was 100% (n = 5).

We used a rubric (established in previous years) to assess the individual ILO’s as described above. Rubrics used were on a 5-point scale with 5 denoting exemplary demonstration of the SLO involved and 1 denoting no or very poor demonstration of the SLO involved. The results for Biostatistics MS program for 2016-2017 are shown in Tables 1 and 2 below.

The results for Biostatistics MS program for 2015-2016 are shown in Tables 1 and 2 below.

Table 1: Frequencies of Rubric Score for Biostatistics MS 2015-2016

	SLO 1	SLO 2*	SLO3
Rubric Score 0	0	0	0
1	0	0	0
2	0	1	0
3	0	0	0
4	0	7	4
5	5	2	1
Total	5	10	5

\*SLO2 was from a course rubric and not all in the course took the Comprehensive Examination.

Table 2: Summary Statistics of Rubric Scores for Biostatistics MS 2015-2016

Statistic	SLO 1	SLO 2	SLO3
Minimum	5	2	4
Maximum	5	5	5
Mean	5	4.00	4.2
Stand. Deviation	0	0.82	0.45

The Statistics and Biostatistics Department evaluates the results of the comprehensive examination twice per year. This information, along with student feedback, alumni feedback, and information about current industry demands for specific statistical skills has led to our recent modernizing of our curriculum.

This year we incorporated the information learned from the assessment of the individual rubrics from the tools used last year in our transformation of both programs for semester conversion.