Program Assessment: *Annual Report*

Program(s): **Graduate Certificate in Biosecurity & Disaster Preparedness**

Department: Epidemiology & Biostatistics

College/School: College for Public Health & Social Justice

Date: 6/1/18

Primary Assessment Contact: Terri Rebmann

1. Which program student learning outcomes were assessed in this annual assessment cycle?

Note: Significant changes were made to the Program Assessment process this year based on feedback from UAC about last year's program assessment and on the findings from the 2017 program assessment.

Our assessment plan includes both direct and indirect measures.

The indirect measures are to use an exit interview to determine the following:
1) Students' perceived confidence in performing the program competencies
2) Students' perceived confidence that they can use and/or interpret the terms and nomenclature of the field

The goal is to have ≥ 75% of the graduating Certificate students indicate a positive response on each of the "perceived achievement of competencies" questions (i.e., "Very confident" or "Somewhat confident").

The direct measure is to evaluate student performance on the culminating assignments in the BSDP 5103 and BSDP 5203 courses during the annual Institute Strategic Planning Retreat/Meeting (see rubric below). The goal is to have ≥ 75% of the graduating Certificate students achieve an "excellent" or "good" ranking on each of the assessed learning outcome measures from these culminating projects. Two learning outcome measures from one competency (Use an evidence-based approach to develop and analyze human, animal, and environmental hazard control strategies, programs, and policies, taking into account legal and ethical considerations) were assessed during this cycle: 1) Identify and cite relevant sources, and 2) Apply information from relevant sources appropriately.

2. What data/artifacts of student learning were collected for each assessed outcome? Were Madrid student artifacts included?

Indirect measures: An exit survey is conducted with each graduating student to assess perceived ability to perform the competencies. Students' perceived confidence in performing the program competencies and perceived confidence that they can use and/or interpret the terms and nomenclature of the field are both measured on a 5-point Likert scale consisting of "Very confident", "Somewhat confident", "Neither confident nor unconfident", "Somewhat unconfident", or "Very unconfident". The goal is to have ≥ 75% of the graduating students indicate a positive response on each of the two perceived confidence questions (i.e., "very confident" or "somewhat confident").

Direct measures: Student performance on the culminating assignments in two required/core courses (BSDP 5103's development of an infectious disease outbreak scenario paper and BSDP 5203's assessment of an agency/organization emergency management plan paper) was used for program assessment. Assignments from half of the graduating students were randomly selected and used for program assessment. Student assignments were de-identified before review to maintain confidentiality. Data was collected throughout the 2017/2018 academic year and

assessed during the spring 2018 Institute for Biosecurity Strategic Planning Retreat/Meeting. The goal is to have ≥ 75% of the assessed students achieve an "excellent" or "good" ranking on each of the assessed learning outcome measures from these culminating projects.

No Madrid courses/program were involved.

3. How did you analyze the assessment data? What was the process? Who was involved?
   NOTE: If you used rubrics as part of your analysis, please include them in an appendix.

Indirect measures: The quantitative and qualitative data from the exit interview were brought in report form and shared with the BSDP faculty at the 2018 Institute for Biosecurity Strategic Planning Retreat/Meeting (see attached). Faculty examined the data to determine the extent to which the goals were met (i.e., whether ≥ 75% of the graduating students indicated a positive response on each of the "perceived achievement of competencies" questions).

Direct measures: The de-identified student assignments were copied and provided in full to all Biosecurity & Disaster Preparedness faculty (both full-time and adjunct) who attended the spring 2018 Institute for Biosecurity Strategic Planning Retreat/Meeting. At the meeting, faculty were provided a copy of the student assignments and the grading rubric (see attached), and the ranking system for determining student achievement of the learning outcome measures was explained. Next, faculty read through each student assignment and discussed the extent to which faculty believed the student had achieved the learning outcome measure using the ranking system identified on the rubric: excellent, good, fair, or poor (see definitions of each on the rubric). This was done for each learning outcome measure assessed using each data/artifact from each of the assessed students. If faculty did not agree on the ranking for a student artifact, a vote was taken, with the majority winning.

4. What did you learn from the data? Summarize the major findings of your analysis for each assessed outcome.
   NOTE: If necessary, include any tables, charts, or graphs in an appendix.

Program Assessment took place at the Annual Institute for Biosecurity Retreat on Friday, May 4, 2018. All full-time faculty and two adjunct faculty participated in the Program Assessment.

Indirect measures of performance:

All of the graduates reported that they were very or somewhat confident that they could perform three of the four competencies (See attached Table).

Three-quarters (75%) reported that they were very or somewhat confident that they could perform the fourth competency; 25% reported being neither confident nor unconfident that they could perform the fourth competency (See attached Table).

Qualitative comments from students via the exit interview and the student representative present at the Annual Institute for Biosecurity Retreat indicate that students are very happy with the Biosecurity and Disaster Preparedness program, especially in terms of the curriculum and the faculty instructors. Positive comments included the following:
   "The curriculum and assignments are very real-world"
   "The faculty demonstrate a lot of enthusiasm and expertise"

These findings exceed the expectations for the indirect measures.

Direct measures of program performance:

Competency 1 learning outcome measures 1a (Identify and cite relevant sources): 100% of faculty rated all assessed students as being "excellent" for each of the two data artifacts assessed.

Competency 1 learning outcome measures 1b (Apply information from relevant sources appropriately): 100% of faculty rated all assessed students as being "excellent" for the first of the two data artifacts assessed (development of an infectious disease outbreak scenario paper). On the second data artifact (assessment of an agency/organization emergency management plan paper), 100% of the faculty rated one student as being "excellent" and the other as being "good".

These findings exceed the expectations for the direct measures.

5. How did your analysis inform meaningful change? How did you *use the analyzed data to make or implement recommendations for change* in pedagogy, curriculum design, or your assessment plan?

Findings from this year's program assessment indicate that students are achieving the competencies and learning outcome measures for the Certificate program in Biosecurity and Disaster Preparedness, at least for the learning outcomes that were measured this year. Therefore, faculty did not identify any necessary changes to the program curriculum at this time. Significant changes were made to the assessment plan and the assessment process; see next section for details.

6. Did you follow up ("close the loop") on past assessment work? If so, what did you learn? *(For example, has that curriculum change you made two years ago manifested in improved student learning today, as evidenced in your recent assessment data and analysis?)*

Significant changes were made to the Program Assessment process and Program Assessment plans this year based on feedback from UAC, findings from the 2017 program assessment, and reorganization of the unit. Due to reorganization within the College for Public Health and Social Justice, the BSDP programs now fall under the Department of Epidemiology & Biostatistics; this was updated on the Program Assessment Plan. Based on findings from the 2017 Program Assessment, the number of indirect measures was reduced from eight to four. Based on feedback from UAC review and annual updates to the BSDP program competencies, the following changes were made to the Program Assessment: 1) learning outcomes were reworded/revised and simplified to measure only a single parameter, 2) the number of learning outcomes assessed each year has been reduced from seven to two, 3) a plan has been developed to outline when each learning outcome will be assessed, to ensure that each will be evaluated on a regular basis, 4) the assessment rubric has been clarified to better demonstrate how student performance is being measured, and 5) BSDP competencies were updated based on programmatic changes. A plan was developed for the timing of assessing the learning outcome measures (see attached). In addition, the rating/ranking system for student performance on the learning outcomes was modified from only yes/no (meets expectations/does not meet expectations) to a four-point ranking consisting of the following: Excellent (consistent and accurate), good (almost always and usually accurate), fair (not consistent and/or multiple mistakes), or poor (very inconsistent/missing and/or many mistakes). A revised/updated assessment plan is being submitted along with this report to reflect changes in the program assessment.

IMPORTANT: Please submit any <u>revised/updated assessment plans</u> to the University Assessment Coordinator along with this report.

Rubric for the Learning Outcome Measures Assessed in 2018 for the Biosecurity & Disaster Preparedness Certificate Program

Class & assignment	Competency	Learning outcomes (LO) linked to program competencies	Extent to which students demonstrate achievement of LO (Excellent, good, fair, or poor)
BSDP 5103 Development of an infectious disease outbreak scenario paper	1: Use an evidence-based approach to develop and analyze human, animal, and environmental hazard control strategies, programs, and policies, taking into account legal and ethical considerations.	1a: Identify and cite relevant sources	
		1b: Apply information from relevant sources appropriately	
BSDP 5203 Assessment of an agency/organization emergency management plan paper	1: Use an evidence-based approach to develop and analyze human, animal, and environmental hazard control strategies, programs, and policies, taking into account legal and ethical considerations.	1a: Identify and cite relevant sources	
		1b: Apply information from relevant sources appropriately	

Demonstrates achievement ranking system: Excellent (Consistent and accurate), good (almost always and usually accurate), fair (not consistent and/or multiple mistakes), or poor (very inconsistent/missing and/or many mistakes)

Exit Interview Data: Fall 2017 through Spring 2018

Certificate graduates' perceived confidence of performing the competencies [N=4]

Competency	Very Confident %	Somewhat Confident %	Neither Confident Nor Unconfident %
Use an evidence-based approach to develop and analyze effective human, animal, and environmental hazard control strategies, programs, and policies, taking into account legal and ethical considerations	50	50	
Explain the scientific characteristics, including transmission routes and control measures, of major biological hazards that result in human and animal health risk	50	50	
Create and disseminate tailored messages regarding biosecurity hazards and risks to responders, the public, the media, and policy makers	50	50	
Use and/or interpret the terms and nomenclature of the biosecurity field	50	25	25

Qualitative Comments from Certificate Graduates Collected Via the Exit Interview

- The curriculum and assignments are very real-world
- The faculty demonstrate a lot of enthusiasm and expertise
- I have enjoyed my time with SLU in their graduate certificate program.

Planned Timeline for Assessing the Certificate Program Learning Outcome Measures

Learning Outcome Measure	Year It Will be Examined During the Program Assessment Process
1a: Identify and cite relevant sources	2018
1b: Apply information from relevant sources appropriately	2018
1c: Apply/use biosecurity nomenclature and terminology (such as "isolation" and "quarantine") related to infectious diseases accurately	2019
2a: Develop appropriate interventions that minimize human and animal disease	2019
2b: Integrate appropriate scientific characteristics of an infectious disease into a scenario or case study	2020
3a: Communicate the biosecurity hazards and risks related to a scenario or case study	2020
3b: Develop a health communication message that is appropriate for the intended audience	2020