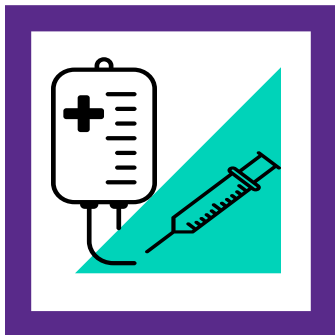


# Brody School of Medicine

## Actions Taken to Improve Student Learning Based on Analysis of Results



### Graduate

\*Programs included:

- Ethnic and Rural Health Disparities (Certificate)
- Medicine (MD)
- Public Health (MPH)
- Interdisciplinary Biological Sciences (PhD)

### Examples

- Expanded course content to include a greater number of countries because of newly published global public health policy documents
- Modified instruction in courses to place special emphasis on scientific writing components including research proposals
- Incorporated an additional means of assessment to evaluate student's research proposals
- Identified students in need of remedial attention prior to examinations through directed changes in the curriculum and a more comprehensive tracking system
- Incorporated mandatory training sessions
- Advised students to submit assignments before the due date in order to receive instructor feedback and have the opportunity to improve the assignment prior to formal grading
- Arranged monthly faculty meetings to discuss instructional deficiencies

Program name	Ethnic and Rural Health Disparities (Graduate Certificate)
Delivery mode	Face to Face and Online
Outcome being summarized	<p>Knowledge in Global Public Health – Students demonstrate knowledge in specific areas of global public health.</p> <p><i>Note: In 2017-18, faculty revised the program assessment plan due to feedback received from the Assessment Review Committee and Institutional Assessment Office therefore one year of data is described.</i></p>
Program level example	<p>The ERHD graduate online certificate program was designed to train new graduate health professionals in the areas of ethnic and rural health disparities. The objectives of the ERHD Graduate Certificate Online Program are to prepare graduates with skills to: (1) Inform, educate, and empower people to address ethnic and rural health disparity issues; (2) Prepare graduates to develop culturally competent projects, plans and policies that are designed for specific ethnic and rural communities in the United States; and (3) Prepare graduates to develop culturally competent projects, plans and policies that are designed for specific global communities around the world.</p> <p>The program assesses outcomes around Knowledge in Ethnic Health and Health Disparities, Knowledge in Global Public Health, and Qualitative Research Skills.</p> <p>To assess students’ knowledge in global public health multiple course-embedded means of assessment are used. Students are required to: 1) Complete weekly discussion board assignments; 2) Collaborate in online group exercises; 3) Complete Midterm and Final exams; and 4) Complete a Fieldwork Project or Proposal that will investigate a specific disease or health issue associated with a specific country. The Criterion for Success is that 80% of students score an average of 3 or better on the Global Public Health rubric.</p> <p>Initially content was focused on several countries in Africa, Asia, Latin America, the Eastern Mediterranean, Europe, Western Pacific, and North America. These were included because newly published global public health policies were available. <b>In 2017-18 faculty expanded the number of countries in the course to include Sweden, Australia and New Zealand. This course content change was made because there were newly published global public health policy documents available for these countries.</b></p> <p>In 2017-18 Results showed that out of 11 students who completed MPH 6007, 82% scored a 3 (meeting) or 4 (exceeding)</p>

	<p>in the completion of their weekly discussion board assignments collaboration in online group exercises, Midterm &amp; Final exam scores, and on the fieldwork project or proposal.</p> <p>Assessment of the students' work (weekly assignments and fieldwork project or proposal) indicates that students understood the need to review the additional countries as they related in similarity to the types of public health systems in other countries. The actions taken to add additional countries helped students' knowledge base about global public health as well as for students to recognize more of the similarities of public health systems around the globe. Providing additional countries also helps to improve students who were just meeting (3) the criteria to actually achieve a level of exceeding (4).</p> <p>Faculty will continue to add more countries each year so that students can conduct more contrast and comparisons of different public health systems globally. Based upon faculty judgment, expanding the number of countries allows for students to get a better sense of the similarities of public health systems as well as to increase their knowledge based about global public health.</p>
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Program name	Medicine (MD)
Delivery mode	Face to Face
Outcome being summarized	Cognition of Biomedical Information
Program level example	<p>The Purpose of the Doctor of Medicine program at the Brody School of Medicine is to provide an accredited education program for medical students leading to the MD degree. The educational program is consistent with our mission of enhancing generalist training and offering opportunities in medicine to minority and disadvantaged students.</p> <p>The program assesses outcomes around Application of Biomedical Information, Cognition of Biomedical Information, Communication Skills, Cultural Competence, Research, and Medical Ethics.</p> <p>Regarding the Cognition of Biomedical Information outcome, faculty utilize United States Medical Licensing Examination (USMLE) Step 2 Clinical Skills (CS) licensing examination to assess students' ability to apply biomedical information for solving problems/making relevant decisions for care of individuals/populations. The specific subcomponent that measures this outcome is the ICE: Integrated Clinical Encounter. The exam allows comparison of Brody students against national norms. The criterion for success is 100% of Brody students will pass the ICE subcomponent of the USMLE Step 2 CS examination on the first attempt, and the class average will be higher than the national average</p> <p>Historically, 3 to 4 of the 80 BSOM students did not pass this examination on their first attempt, a level slightly above the national failure rate of about 4%. <b>Directed changes in the curriculum along with a more robust tracking process allows identification of students who will benefit from remedial attention before the examination, increasing the overall pass rate.</b></p> <p>A voluntary 10-station OSCE was implemented in 2016-2017. Coinciding with the introduction of the 10-station OSCE, we tracked the number of students failing one component of the USMLE. Step 2 CS failures decreased from five (2016-2017) to two (2017-2018). The two students who failed did not participate in the voluntary 10-station OSCE.</p> <p><b>For 2017-2018, the 10-station OSCE was made mandatory, and students participating in this mandatory training session will</b></p>

	<b>take the USMLE Step 2 CS examination during the 2018-2019 academic year.</b>
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Program name	Master of Public Health (MPH)
Delivery mode	Face to Face and Online
Outcome being summarized	<p><b>Health Behavior</b> - Students in the MPH program on the Health Behavior Track will design, implement and evaluate health promotion and disease prevention/interventions that target multiple levels of the social ecological framework; demonstrating learned competencies as part of their final professional paper oral and visual presentation.</p>
Program level example	<p>The mission of the Master of Public Health (MPH) includes: (a) expanding a workforce that addresses contemporary public health challenges; (b) teaching prevention and population health to medical students and resident physicians; (c) engaging in community-based research with linkages throughout North Carolina; and (d) developing leaders in long-term care planning and administration for the growing elderly population in North Carolina. Graduates of this program are expected to possess a set of fundamental skills and knowledge for public health practice and research, as set forth by the Association of Schools and Programs of Public Health (ASPPH).</p> <p>The program assesses outcomes around Epidemiology, Cultural Beliefs and Values, Health Behavior, Mastery of MPH Core Competencies, Public Health Mastery, and Successful Collaboration.</p> <p>In order to assess students' ability (students on the Health Behavior concentration) to design, implement and evaluate health promotion and disease prevention/interventions that target multiple levels of the social ecological framework, instructors require students to write a professional paper on a social and behavioral science topic and present it. Students demonstrate competencies through this professional paper and the oral and visual presentation. Faculty then evaluate the paper and the presentation using two rubrics. The two-part criterion for success (CFS) is: (1) 100% of students on the Health Behavior concentration will score 2 or above for the following first four core MPH competencies as demonstrated in the Professional Paper (MPH 6991) rubric and (2) 100% of students on the Health Behavior concentration will score 14 or above for the last competency on the presentation (MPH 6992) rubric:</p> <ol style="list-style-type: none"> <li>(1) Describe a public health problem in terms of magnitude, person, time and place.</li> <li>(2) Describe the role of social and community factors or health care system in both the onset and solution of public health problems.</li> <li>(3) Identify basic theories, concepts and models from a range of social and behavioral disciplines that are used in public health research and practice.</li> </ol>

- (4) Develop cogent and persuasive written materials regarding public health topics.
- (5) Deliver an oral presentation using recognized criteria for effective information dissemination.

In 2016-17, the CFS was met. 100% (n=7) students in the Health Behavior concentration scored 2 or above for the four competencies on the Professional Paper (MPH 6991) rubric. 100% (n=7) students in the Health Behavior concentration scored 14 or above on the presentation (MPH 6992) rubric.

The majority of students did well. It was determined that students are most likely to be deficient in the following three competencies: (1) Describe a public health problem in terms of magnitude, person, time and place; (2) Describe the role of social and community factors or health care system in both the onset and solution of public health problems; and (3) Develop cogent and persuasive written materials regarding public health topics. This was attributed to lack of entry-level competencies among students when entering the Master of Public Health (MPH) program.

**In an effort to address this issue, in 2017-18, students were advised to submit assignments to instructors to receive feedback prior to the actual due date and the subsequent occurrence of formal grading. With this approach, feedback was received for modification to optimize successful completion. Faculty also met monthly to discuss if there are any instructional deficiencies.**

The 2017-18 assessment results show that 100% (n = 9) students in the Health Behavior concentration scored 2 or above for the four competencies on the Professional Paper (MPH 6991) rubric. 100% (n = 9) students in the Health Behavior concentration scored 14 or above on the presentation (MPH 6992) rubric.

The CFS was met, again. But in general, students did not request feedback from faculty on this assignment as faculty had hoped. Students continue to underperform in these three competencies. Faculty decide to continue to meet and brainstorm ways to improve students' learning in these competencies. For example, faculty are trying to find if there is a course on campus that teaching technical writing skills in this field and exploring the possibility of incorporating such a course into the curriculum.

Program name	Interdisciplinary Biological Sciences (PhD)
Delivery mode	Face to Face
Outcome being summarized	<b>Written Scientific Communication</b> - Every student should be able to effectively communicate written research results.
Program level example	<p>The Interdisciplinary Doctoral Program in Biological Sciences is offered by the clinical and Basic science departments of the Brody School of Medicine and the Departments of Biology and Chemistry of Harriot College to meet the need for scientifically trained specialists, who are able to move effectively among the disciplines of medicine, biology and chemistry. The program prepares professionals in specific research disciplines for careers in academia, research and industry, while giving them a broader scientific perspective that empowers them to work within multidisciplinary teams.</p> <p>The program assesses outcomes around Oral Scientific Communication, Written Scientific Communication, Conceptual and Content Knowledge of Discipline, Research Study Design and Critique, Data Analysis and Interpretation, and Pedagogy.</p> <p>In order to assess students' ability to effectively communicate written research results, faculty use two means of assessment: (1) research seminar presentation abstract is evaluated by two faculty members; and (2) evaluation of the dissertation, specifically the discussion section and overall writing style, by dissertation committee members. The criteria for success is all students earn a minimal score of 80 (out of 100) on the abstract of their research seminar presentation and on components of the dissertation (Discussion; Writing Style). After results from 2016-17 were analyzed an additional means of assessment was added (research proposal) and data was gathered in academic year 2017-18.</p> <p>In 2016-17 the criteria for success was met. All 25 students over Fall 2016 and Spring 2017 from the Biology, Chemistry and Biomedicine concentrations scored at or above 80 on the evaluation of the abstract of their research seminar presentation. In addition, all six of the students who completed dissertations earned a score at or above 80 for the discussion section and writing style categories.</p> <p>It is notable that the students, although representing two different groups, were all successful. The results also show that students in the formative stages of the program prior to degree completion are demonstrating competent skills in the area of written scientific communication. This suggests that early</p>



exposure to writing through coursework in BIOL/CHEM/BISC 8815 Research Seminar is having a positive impact on students learning in the area.

As the funding of grant proposals is central to professional success for students who are intent on careers in academia and increasingly in other areas, faculty recognize the value of added emphasis in this area to ensure that graduates of our IDPBS doctoral program learn the necessary writing skills for professional success.

**Therefore, in 2017-18, faculty expanded the instruction in proposal writing as part of the BIOL/CHEM/BISC 8815 Research Seminar course. Accordingly, the course was modified to include formal instruction in the area of scientific writing. Special emphasis was placed on writing components of research proposals as an antecedent to preparation and presentation of research seminars based on these proposals. To more comprehensively measure student learning an additional means of assessment was implemented and students were scored on their research proposals.** These scores, along with other metrics previously performed, provide an assessment of student learning outcomes in the area of written scientific communication.

Results in 2017-18 again shows that the criteria for success is met and exceeded. For the research seminar abstract (see 8815 Research Seminar ASMT DATA 2017-18) all students scored about 80% or above. With 14 different students evaluated over two semesters (some repeats), only a single score was at 80%, five scored 90% and the remainder scored 100%, which shows that there is a decided skew towards scores well above the 80% minimum (floor for criterion for success).

The dissertation scores (average values) from the Dissertation Evaluation Rubric (discussion and writing style categories) for each of the four students who completed their dissertations in this reporting period were all above the minimum score of 80%, with the lowest being 85% and the highest for these categories at 100%.

Further, the scores for research proposals in this first year of evaluation ranged from a low of 75% to a high of 95%. Since this category is a new means of assessment the scoring criteria for success in the category for written scientific communication remain to be established but these results provide baseline information for the 2018-19 action plan.

An analysis of the results show that the students were successful

	<p>in meeting the criterion set for the written communication learning outcome. All evaluation measures met or exceeded the minimum criteria for success in this category. It is notable that these assessments include both formative and summative assessments for students at different stages in their advancement through the IDBPS degree program. The student population assessed included those who are in the earliest stages and those who are completing their degrees. This suggests that students are demonstrating acceptable professional written scientific communication skills throughout their program of study. It also points to a curriculum structure and pedagogy that promotes solid standards of learning in this area.</p>
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