

**Gateways to Public Health:
Redesigning an Undergraduate Global Health Curriculum
for Improved Student Access and Success**

Department of Public Health Sciences

Jessamyn Bowling, Assistant Professor
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Abstract

Continuing growth in enrollment without corresponding growth in resources for staffing the course and shifting enrollment patterns limit our ability to accommodate student demand while preserving our emphasis on active learning in this course, with possible implications for student success. Given dramatic disparities in enrollment and graduation rates between subgroups of students, shifts in educational practices should be accompanied by consideration of the impact that such shifts have on documented disparities in educational attainment. The overall purpose of the proposed project is to plan, implement and evaluate an evidence-based redesign of our undergraduate global health curriculum to maximize student access and success. Through a rigorous review of student enrollment patterns, a systematic backward design approach to curriculum redesign, and formative and summative evaluation of curriculum effectiveness, our team of faculty will carry out a redesign of the global health curriculum that will enhance equity in student access to our public health programs and success in those programs.

Budget Request for SOTL Grant Year 2016

Joint Proposal? Yes No

Title of Project Gateways to Public Health: Redesigning an Undergraduate Global Health Curriculum

Duration of Project Spring 2017-Summer 2018

Primary Investigator(s) Bowling, Zuber, Racine & Forthofer

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UNC Charlotte SOTL Grants Previously Received (please names of project, PIs, and dates)

Allocate operating budget to Department of Public Health Sciences

Account #	Award	Year One January to June
Faculty Stipend	Transferred directly from Academic Affairs to Grantee on May 15	\$ 7,700
911250	Graduate Student Salaries	\$ 1,500
911300	Special Pay (Faculty on UNCC payroll other than Grantee)	
915000	Student Temporary Wages	
915900	Non-student Temporary Wages	
920000	Honorarium (Individual(s) not with UNCC)	
921150	Participant Stipends	
925000	Travel – Domestic	
926000	Travel – Foreign	
928000	Communication and/or Printing	
930000	Supplies	\$ 500
942000	Computing Equipment	
944000	Educational Equipment	
951000	Other Current Services	
GRAND TOTAL		\$ 9,700

Account #	Award	Year Two July to June
Faculty Stipend	Transferred directly from Academic Affairs to Grantee on May 15	
911250	Graduate Student Salaries	\$ 1,500
911300	Special Pay (Faculty on UNCC payroll other than Grantee)	
915000	Student Temporary Wages	
915900	Non-student Temporary Wages	
920000	Honorarium (Individual(s) not with UNCC)	
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925000	Travel - Domestic	\$ 1,000
926000	Travel - Foreign	
928000	Communication and/or Printing	
930000	Supplies	
942000	Computing Equipment	
944000	Educational Equipment	
951000	Other Current Services	
GRAND TOTAL		\$ 2,500

Attachments:

1. Attach/provide a narrative that explains how the funds requested will be used.
2. Has funding for the project been requested from other sources? ___ Yes No. If yes, list sources.

Year 1

Faculty Stipends

Funds are requested for summer salary support for Dr. Bowling (\$3,850), Dr. Zuber (\$1,925), and Dr. Racine (\$1,925). Dr. Forthofer is on a 12-month appointment as Department Chair; thus, no additional support for her effort is requested.

Graduate Student Salaries

Funds are requested for one graduate student (\$1,500) to support curriculum development activities.

Supplies

\$500 are requested for teaching materials and resources to aid in the redesign of the curriculum.

Year 2

Graduate Student Salaries

Funds are requested for one graduate student (\$1,500) to assist with analysis for summative evaluation.

Travel

Funds are requested for one trip to a national meeting to present the results of the project (\$1,000).



UNC CHARLOTTE
College of Health and Human Services

Office of the Dean

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October 31, 2016

Dear Members of the Scholarship for Teaching and Learning Selection Committee:

I enthusiastically submit this letter of support for the SOTL Grant application from the Department of Public Health Sciences entitled *Gateways to Public Health: Redesigning an Undergraduate Global Health Curriculum for Improved Student Access and Success*. This project is an imperative step in the College of Health and Humans Services' response to the rapidly growing interest in undergraduate health programs.

Currently, the Department of Public Health Sciences houses a highly competitive and CEPH-accredited Bachelors of Science Public Health program and a highly subscribed public health minor (the largest one on the UNC Charlotte campus). In the fall of 2017, the Department will launch a new unrestricted Bachelors of Science in Health Systems Management degree in strategic response to an unmet need in our undergraduate student population. Collectively, these programs provide UNC Charlotte students with access to high quality and market-responsive gateways for entry-level careers in the health professions.

To continue to educate and serve our students effectively, periodic review, redesign and realignment of our curricula are necessary. This proposed project will facilitate these processes that are essential to enhancing our global health offerings. Approximately one third of the public health minor students enrolling in the global health course are majoring in other health related programs. The redesign of the global health curriculum will have a tremendous and positive impact on the quality of student experiences across all CHHS programs.

I thank you in advance for your consideration of this proposal, and am available for any further questions about the commitment of the College of Health and Human Services to the project.

Sincerely,

Nancy Fey-Yensan, PhD, RD
Dean, College of Health and Human Services



A. Specific Aims

Purpose: The overall purpose of the proposed project is to plan, implement and evaluate an evidence-based redesign of our undergraduate global health curriculum to maximize student access and success.

Objectives:

1. Analyze student enrollment patterns and student outcomes from Fall 2013-Fall 2016.
2. Using a backward design framework, identify course-level and topic-level learning outcomes.
3. Develop a standardized curriculum and optimal course delivery formats for implementation with a mix of full-time and part-time faculty.
4. Implement the redesigned curriculum.
5. Evaluate the relative effectiveness of the redesigned curriculum across student subgroups.

The proposed research aims to extend our knowledge in this area by considering the extent to which curriculum effectiveness varies across student subgroups and identifying instructional practices that may minimize such variation.

Continuing growth in enrollment without corresponding growth in resources for staffing the course and shifting enrollment patterns limit our ability to accommodate student demand while preserving our emphasis on active learning in this course, with possible implications for student success. Given dramatic disparities in enrollment and graduation rates between subgroups of students, shifts in educational practices should be accompanied by consideration of the impact that such shifts have on documented disparities in educational attainment.

Currently, our undergraduate global health curriculum is delivered as HLTH 4280. This course was originally developed to be a core prerequisite for our upper division BSPH curriculum. Later, the course was included in the requirements for the public minor, spurring growth in enrollment and diversity among enrolled students. Since Fall 2014, the number of students enrolled per semester has nearly doubled, increasing from 139 to 222. Collectively, these dynamics have stimulated consideration of alternative approaches, including the possibility of other modes of delivery and the relative merits of differentiating the course content for lower division and upper division students.

B. Literature Review

Since 1975, enrollment in postsecondary education has increased, not just as a result of population growth, but also as a result of increasing enrollment rates (U.S. Department of Education, 2013). This same time period has seen dramatic changes in the composition of college students, with large declines in the rate of enrollment among whites and sizeable increases among Hispanics, Asian/Pacific Islanders, and Blacks.

Nonetheless, despite a long history of dramatic gains in educational attainment in the U.S., the period since 1975 is marked by a well-documented plateau in educational attainment (Bowen, Chingos, & McPherson, 2009) and troubling disparities in graduation rates between students from different racial and ethnic groups as well as between students from different levels of socioeconomic status (Bowen, Chingos, & McPherson, 2009).

Growing enrollments, flat or shrinking higher education budgets, increasing diversity and disparities in graduation rates underscore the importance of exploring alternative modes of delivering instruction. Many colleges and universities have begun to integrate online or distance-based instruction with traditional face to face delivery in an approach that is often termed “blended learning” (Halverson, Graham, Spring, & Henrie, 2014; Garrison & Norman, 2007). Such modes of delivery generally employ asynchronous approaches to instruction for some course content, thereby minimizing the impact of space and time constraints, which may contribute to better student outcomes and higher retention (Kiviniemi, 2014; Helms, 2012). Indeed, some evidence suggests that blended learning with continuous monitoring by faculty and opportunities for collaboration among students promotes student autonomy and self-regulated learning (Lafuente, Remesal, & Alvarez Valdivia, 2013; Black & William, 2009).

Many institutions have begun to incorporate “flipped” or inverted classroom approaches in their blended instructional methods. The flipped classroom approach emphasizes delivery of basic content outside of class time, with face to face in-class time devoted to active and collaborative learning activities focused on application of knowledge (O’Flaherty & Phillips, 2015). In terms of Bloom’s taxonomy of thinking and learning, students are responsible for engaging in lower levels of cognitive work independently, asynchronously and with flexibility as to time and place, whereas higher order cognitive work occurs in interactive and collaborative in-class activities (Anderson, Krathwohl, & Bloom, 2005). Studies of student outcomes in flipped classrooms in the health sciences have found evidence that the approach stimulates critical thinking, engages students, supports mastery of skills (Bosner, Pickert, & Stibane, 2015; Galway, Corbett, Takaro, Tairyan, & Fank, 2014), with higher levels of student satisfaction than is commonly found for traditional instructional formats (Galway, Corbett, Takaro, Tairyan, & Fank, 2014; Kiviniemi, 2014; Bosner, Pickert, & Stibane, 2015).

Although there is considerable evidence of the benefits of blended learning and flipped classroom approaches for both institutions and students, surprisingly little attention has been devoted to investigations of the extent to which such benefits are evenly distributed across subgroups of students. Indeed, one rather unique study of MBA students did find evidence that instructor behaviors only predicted students’ perceived learning, whereas student behaviors predicted students’ grades, perceived learning and satisfaction with the delivery medium, and technological or system characteristics predicted students’ perceived learning and satisfaction with the delivery medium (Arbaugh, 2014).

Given dramatic disparities in enrollment and graduation rates between subgroups of students, shifts in educational practices should be accompanied by consideration of the impact that such shifts have on documented disparities in educational attainment. The proposed research aims to extend our knowledge in this area by considering for whom our curriculum redesign is most effective and identifying instructional practices that may minimize any gaps in student outcomes between students of different subgroups.

C. Methods

Reflecting our explicit emphasis on oral and written communication competencies within our BSPH program, our department participates in the UNC Charlotte Communication Across the Curriculum (CxC) program. As a part of CxC, we have mapped our BSPH competencies with our communication assignments and have implemented an ePortfolio process.

The number of students accepted into the BSPH major is influenced by faculty-student ratio, available faculty, faculty teaching loads, and practicum and employment considerations. University policy prevents the program from placing enrolling limits on students declaring the pre-public health (PRPH) major. Consequently, students declaring the PRPH major have increased from approximately 30 in 2008 to over 300 in 2013 and beyond while our cohort capacity for the major has remained fixed at approximately 45. On average, 120 PRPH majors apply for these 45 BSPH major slots each year. The denied students must pursue another major, which may increase their educational costs and graduation timeline by 1-2 years.

To minimize the negative impact on these students as well as more tightly coordinate the pre-public health requirements with the upper division BSPH major and our public health minor, currently the largest minor on campus with 800+ students in 2016, we aligned the PRPH major and core Public Health minor requirements. An unintended consequence of this re-alignment has been a shift in the composition of the enrollment in HLTH 4280, such that current enrollment include a large proportion of PRPH students and lower level students in other majors.

This proposal is submitted by a team of faculty who, collectively, span all ranks of our faculty, and who, individually, bring unique talent and experience to carrying out the project objectives. Dr. Bowling is a first-year Assistant Professor with a scholarly emphasis on working with diverse populations; she is preparing to teach HLTH 4280 for the first time in Spring 2017. Dr. Zuber is a Lecturer and Interim Director of the BSPH program, with extensive experience teaching LBST courses and a strong knowledge of student needs across levels of the curriculum. Dr. Racine is an experienced HLTH 4280 instructor with research and study abroad leadership experience. Dr. Forthofer provides overall leadership and previous experience with scholarship of teaching and learning at two previous institutions.

We propose to use data from Report Central to carefully assess current enrollment patterns in HLTH 4280. Using a Backward Design approach at the programmatic level, we will revisit global health learning objectives for the BSPH and public health minor programs, then consider the relative merits of alternative modes of delivering a curriculum to meet those learning objectives. In consultation with our entire faculty, course format(s), mode(s) of delivery will be selected. Then, a Backward Design process will be followed on a course-specific basis to craft learning objectives and prioritize content for addressing them. This process will be carefully documented. Then, as the redesigned content is implemented for the first time, the instructors will record reflections about the effectiveness of the curriculum.

Data Sources

In addition to the backward design records and instructor reflections described above, we will use the following data for our summative evaluation of the project.

Student sociodemographic background: Data from Report Central will be used to represent students' demographic characteristics, transfer status, first generation status, academic major, and level.

Student learning behaviors: Student utilization of online course materials will be tracked within CANVAS.

Student learning outcomes: Data on course-specific student learning outcomes will come from scores on informal and formal assessments.

D. Evaluation

Using the data outlined above, we will construct analytic models that assess variation in student learning behaviors and learning outcomes on the basis of student sociodemographic and academic background. Our primary analysis techniques will be multiple regression and logistic regression models, depending on the level of measurement of the outcome variables to be assessed. The faculty team assembled for this project have extensive experience using these analytic methods. Moreover, Dr. Forthofer has extensive experience teaching graduate students to use these and other analytic techniques.

The results of analyses for the summative evaluation will be compared with the results of the formative evaluation to identify any further needed refinements to the curriculum.

E. Knowledge Dissemination

After completing the evaluation of the redesigned course content, we will present to the UNC Charlotte community on the process and findings. The presentation will be advertised through the SOTL community, the School of Education, and the College of Health and Human Services. The presentation will be designed to stimulate dialogue that will assist in interpretation of the evaluation.

Additionally, we will present our findings at the Association of Schools and Programs of Public Health (ASPPHE) conference and through the Global Health network of the Association of Schools and Programs of Public Health.

F. Human Subjects

The proposed research to evaluate the effectiveness of the redesigned curriculum with respect to student outcomes will be submitted to the UNC Charlotte for review.

G. Extramural Funding

Depending on the results of this project, we may consider seeking funding from the Spencer Foundation for additional and more extensive work in this area.

H. Timeline

Activity	Timeline	Deliverable(s)
Analyze previous student enrollment patterns & outcomes (Fall 2013-2016)	Spring 2017	Report on student enrollment patterns and outcomes
Determine optimal level and course delivery modes	Spring 2017	Report to faculty and meeting minutes
Develop course-level and topic-level student outcomes	Summer 2017	Course-level and topic-level student outcomes created
Create standardized course content	Summer 2017	Course content standardized
Implement standardized content	Fall 2017	All instructors implementing standardized content
Evaluate redesigned course across student subgroups	Spring 2018	Course evaluation report
Dissemination of results of evaluation	Spring-Summer 2018	Presentations/Conference abstracts

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