Healthy People 2020 and Education For Health
Successful Practices in Undergraduate Public Health Programs

Boston University
Boston, MA
Health Science Major (BS Health Science), BA/MPH, BS/MPH (Dual Degree Programs)
Public Health Minor
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INSTITUTIONAL CONTEXT

Boston University (BU) supports the inherent desire in each of our students, faculty, and staff to vigorously and creatively pursue knowledge—and embrace the unlimited possibilities that come with academic achievement. Located in the heart of the city, Boston University is a four-year private institution, with a 2011 enrollment of over 16,186 undergraduates, and 13,232 graduate students. BU has nine colleges, including schools of medicine, public health, health and rehabilitation sciences, law and management. With students from over 100 countries, this urban institution is one of the most dynamic universities in the world. http://www.bu.edu/info/about/

PROGRAM DEVELOPMENT

The impetus for development of undergraduate public health at Boston University came from two primary sources. First was a recommendation from Institute of Medicine’s (IOM’s) 2003 report Who Will Keep the Public Healthy, that “...all undergraduates should have access to education in public health.” The second was student and faculty enthusiasm. BU is ideally positioned to develop innovative undergraduate public health programs. These programs exploit the rich resources of our professional schools, our large, diverse undergraduate campus and the renowned Boston Medical Community. Based on these strengths, BU introduced three pathways to study public health as an undergraduate. First in 2004, we leveraged BU’s reputation and strengths in Health Sciences, to develop a Bachelor of Science in Health Science with an increasing focus in global health, and an experiential learning component. Boston University’s second pathway offers undergraduates an accelerated path to a professional masters degree in public health, 4+1 Dual Degree Program – BS/MPH and BA/MPH, introduced in fall 2004 and fall 2009 respectively. The 4+1 Dual Degree Program is a collaboration among the Colleges of Arts and Sciences, Health and Rehabilitation Sciences and the School of Public Health. The third pathway, Public Health minor captures a broader base of undergraduates. The minor was first introduced in 2005, and is a collaboration of the College of Health and Rehabilitation Sciences and the School of Public Health.

Program Administration –Successful Organizational Format for Cross Disciplinary Collaboration in Undergraduate Public Health:

Undergraduate public health programs are housed within The College of Health and Rehabilitation Sciences. The College of Health & Rehabilitation Sciences is the primary health professions college on the undergraduate campus and a natural fit for the development of undergraduate public health courses and programs. To expand on the clinical expertise of the college, new faculty positions were developed including a program director, and tenure and non-tenure track faculty lines. All new faculty hires have a strong background of public health practice and research. Though administratively housed in The College of Health & Rehabilitation Sciences, development and sustainment of undergraduate
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public health is a university-wide initiative. Faculty from the College of Arts and Sciences and the School of Public Health are actively involved in program development, teaching and mentoring undergraduates across public health programs. This truly offers the best of both worlds to our undergraduates; access to multidisciplinary core undergraduate public health courses and the opportunity to advance and become immersed in graduate public health classes as an undergraduate.

With growing interest among students and faculty across disciplines to be involved in undergraduate public health, BU’s Undergraduate Public Health Steering Committee was established in spring 2008. This Committee coordinates, implements and supports innovative faculty initiatives in public health. Committee members include seven faculty members, including deans from the Colleges of Arts and Sciences, Health and Rehabilitation Sciences and School of Public Health. This committee has been a vital part of the success of undergraduate public health at BU. It provides a voice for faculty across disciplines to actively contribute and has enriched the diversity of courses offered, from more traditional courses in epidemiology and biostatistics to team taught courses in global health, involving faculty from Health Sciences and African Studies. This synergy has permitted the development of undergraduate public health programs, that draw on the rich expertise of faculty from across college disciplines. It has provided a professionally stimulating and rewarding environment for faculty, and has led to dynamic undergraduate courses, for which student demand exceeds capacity.

CURRICULUM

BU offers three curricular options to pursue public health as an undergraduate:

- Health Science major (BS Health Science)
- Public Health minor
- BA/MPH and BS/MPH (4+1 dual degree program)

Overriding Goal: the goal of Boston Universities’ undergraduate public health options, in keeping with the IOM’s mandate, is to introduce public health to undergraduates across all disciplines. This broad goal is achieved through coordinated planning of core courses to foster critical thinking, from framing questions, understanding causes and working together to develop solutions, and provide an evidence-based approach to public health.


For undergraduates who wish to complete a major with a public health focus, the health science curriculum offers a foundation in core sciences and liberal arts and an advanced sequence of courses in global public health. Being aware that many undergraduates with a passion for public health may pursue clinical or other professional degrees, this curriculum allows students to concentrate in global public health while getting a sound preparation in the sciences and liberal arts with the option to pursue a graduate clinical professional degree, or other non-health degree, such as law. A key strength of this curriculum is four credit experiential learning requirement and a commitment to engage undergraduates in research. Required public health courses include: global health, health care policy & management, epidemiology, biostatistics or statistics, qualitative strategies in global health, global environmental public health, genomics in public health, health care information systems, critical inquiry, and a practicum (experiential learning requirement).
Experiential Learning in Health Science Major

Experiential learning is an essential component of undergraduate public health education and a curricular requirement of the Health Science bachelor’s degree program. Our commitment to undergraduate experiential learning is demonstrated through appointment of a full time faculty member, dedicated to student instruction and management of this program’s experiential learning component. Students complete the required 4-credit Practicum course (SAR HS 405) in their senior year. The practicum is a planned, supervised and graded internship. Students spend 10-12 hours on site for 12 weeks (minimum 120 hours) during the fall or spring or summer of senior year. This is a skills and project-based internship, not a shadowing experience. Students participate as professionals in meetings and events, establish learning goals and objectives, reflect on their experience through structured journal assignments, and prepare and present a professional report on their experience to faculty and peers at the end of the semester. A comprehensive Practicum Manual is provided for students and site supervisors, who are our community partners. This experience is considered by many students to be the highlight of their undergraduate experience. The internship is an incredibly rich opportunity for undergraduates to apply classroom learning, frequently in a public health department, hospital, or non-profit community-based setting. Many students complete their internships abroad. The Geneva Public Health Internship Program and The Dublin Health Science Internship Program were developed to combine internships with international health organizations, such as World Health Organization, with course work in international health policy.

Sample internships:

http://www.bu.edu/today/node/13327/

Institute for Community Health  http://www.icommunityhealth.org/ collaboration among three Massachusetts health care systems to improve the health of Cambridge, Somerville, and surrounding towns. Example: Students participate in projects to advance community health research; promote community health education and training; develop community action programs and policy; and forge linkages among health care system with shared community health objectives.

World Connect - http://www.worldconnect-us.org is a non-profit based in Waltham, MA dedicated to improving the health and well-being of women and children in underserved and under-resourced communities worldwide. Example: Our students work with community organizations to identify solutions to challenges affecting the health and wellbeing of women and children in their communities.

Massachusetts Association of School-Based Health Centers – http://www.ma4sbhc.org builds the capacity of school districts, schools, and school-based health centers to provide school-based health care services needed by their communities. Example: Students are actively engaged in research for their practicum experience, including surveying educators and school administrators on their perceptions of the impact of health and social factors on academic achievement. Kathryn Rough, BS Health Science ’11 First Place Winner, APHA Undergraduate Affiliates "Health and Academic Achievement: A Survey of Educator Attitudes and Perceptions” APHA Conference, Denver CO, 2010.

Public Health Minor. Enrollment spring 2011: 136 students
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Introduced in 2005, the public health minor has developed into one of the most popular undergraduate minors on campus. In keeping with national AAC&U and ASPH recommendations, required courses include introduction to public health, epidemiology and international health. Additionally, because a fundamental understanding of biostatistics was felt by faculty to be so critical to immersion into public health, a course in biostatistics is also required. Students select two additional courses from a list of fifteen public health electives, ranging from environmental health to genomics in public health. Students have the opportunity to explore public health through coursework, engagement with student public health associations and clubs on campus or through one of the many public health service learning opportunities available to our students.

BA/MPH and BS/MPH (4+1 Dual Degree Program). Enrollment Spring 2011: 36 students

BS/MPH introduced in 2004. BA/MPH introduced in 2009. The accelerated BA and BS MPH programs offer academically excellent students the opportunity to begin master’s level course work as an undergraduate and earn a combined BA/MPH or BS/MPH in five years. The goal of this program is to engage academically outstanding undergraduates in public health, offering some of our most talented undergraduates a streamlined pathway to a professional public health degree. Application to the 4+1 programs in second semester of sophomore year has proved a very appropriate timeline. Students have the opportunity to demonstrate their ability to succeed in rigorous college course work, and the opportunity to explore public health through coursework, engagement with student public health associations and clubs on campus or through one of the many service learning opportunities available to our students. Accepted students complete 16 credits of graduate public course work toward their MPH during the junior and senior undergraduate years. Masters level courses taken as an undergraduate include: epidemiology, biostatistics, health policy management, environmental health, health law, social and behavioral sciences in public health.

STUDENTS

Student interest in public health is reflected both in sustained, rising enrollments in the three undergraduate public health programs, and in large undergraduate public health course enrollments. These courses have captured a large body of undergraduates outside the public health programs. This demand continues to exceed capacity, with the result that new public health course development and additional sections of current courses is an ongoing feature of BU undergraduate public health education. The health science major enrollment grew rapidly to 186 students in the first three years of the program. This enrollment has further increased by an additional 50% over the subsequent three years to a current total of 276 students in spring 2011. The 136 declared public health minors reflect the juniors and seniors pursuing the minor. In addition, many sophomores and some freshmen are taking course work toward the minor. Based on the number of graduating seniors with public health minors, the number is closer to 200 students. The true broader student interest in public health is observed in annual course enrollment numbers; introduction to public health 175 students, epidemiology 200 students, and international health 80 students with an additional course section scheduled for 2012. It is challenging and exciting to respond to BU student passion and demand for engagement in public health.

Association for Prevention Teaching & Research
Association of American Colleges & Universities
LESSONS LEARNED

Build on your institution’s strengths: Concentrate on coordinating the university’s strengths in established disciplines to undergraduate public health, rather than following a preconceived model.

Recruit the best students. Boston University leveraged its prestigious professional schools and its broad base of faculty expertise in undergraduate education to offer a public health professional degree in 5 years through the 4+1 accelerated BS/BA/MPH Dual Degree Program. This has brought exceptional students into the public health profession.

Undergraduate Public Health Major: The decision to offer a health science major, including core chemistry and biological sciences, with a global health focus has proved very successful. Our graduates have a strong foundation in core sciences and global health. With an enrollment of 276 majors, this program has fulfilled a need among many students, who plan to bring their awareness of public health to many professional fields, including medicine, nursing, law, and education, or to advance to a graduate public health professional degree.

Experiential Learning is Essential to Undergraduate Public Health Education

Develop a forum for institutional collaboration. The BU Undergraduate Public Health Steering Committee has been a tremendous success, engaging faculty across disciplines - strong collaborations and effective use of institutional resources.

Let student passion drive the process. For many undergraduates, global health is where the passion is. Introducing the disciplines of public health through a global health prism, has meant teaching a highly motivated and engaged student body from day one. This has brought together faculty, staff, students and community public health professionals. It has expanded horizons, led to new collaborations and innovations in teaching, engaging undergraduates in research and engaging community partners in community participatory research.