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

University of Massachusetts Amherst
Amherst, MA
Undergraduate Degree in Public Health Sciences
Bachelor in Science & 4 Plus 1 BS/MPH
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INSTITUTIONAL CONTEXT & PROGRAM DEVELOPMENT
The University of Massachusetts Amherst is the state’s flagship campus and considered one of the top 50 universities in the United States (U.S. News & World Report, 2011). The School of Public Health and Health Sciences was established in the 1980’s with a mission focused on education, research, outreach, and student involvement. While mostly functioning as a graduate school of public health, initially, the School also had a small but popular undergraduate program in public health, which it dropped in 1989 in order to concentrate on graduate education.

Due to undergraduate student demands early in the new millennium, the major was recreated in its present form in 2007. Starting with 25 students the major has grown to over 300 in four years and continues to be one of the fastest growing major on campus. The leaders of the new undergraduate program in public health have termed the major a “Walking across the campus major” meaning the growth in the major is not from high school students entering the university, but from second semester freshman and sophomores discovering the major once they are on campus.

The program is housed in the Department of Public Health within the School of Public Health and Health Sciences. As with all accredited schools of public health the department covers the five standard disciplines: Epidemiology, Biostatistics, Community Health Education, Health Management and Policy, and Environmental Health. While the major does prepare students for graduate education in public health, it is not a pre-professional public health program, but rather provides a liberal arts education teaching students to think critically about the world and their place in it. Fortunately, the department already had several faculty teaching undergraduate general education courses in health who understood the difference between graduate professional education and undergraduate liberal arts education. One key difference is graduate level work concentrates more on theory while a liberal arts education is more concerned with the real world situations behind the theory. This is an issue many academics struggle with. Having been taught—and expected to deliver—discipline-specific knowledge, many academics have no training in how to help undergraduate students understand and apply this knowledge within a real world context. Recognizing this weakness the designers and leaders of the new major knew teaching students how to learn with a critical eye towards public health was as important as the courses they took. Another important consideration in this area is the fact that no new faculty were hired specifically for the undergraduate program. Currently, all new department faculty hires are made aware of undergraduate teaching requirements, but hires are not made for the undergraduate program alone.

PROGRAM ADMINISTRATION & CURRICULUM
The major was designed, like the field of public health itself, as an interdisciplinary program. The science of epidemiology, biostatistics, community health education, health management and policy, and environmental health all play important roles in keeping our society healthy. Consequently, the under-graduate public health major encompasses all these critical areas with the definition that “public health is the art and
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science of protecting and improving the health of a community through an organized and systematic effort that includes education, assurance of the provision of health services, and protection of the public from exposures that will cause harm.” (http://www.whatispublichealth.org/).

Engaging students to discover their own passions is a key element of the program. In this process of self-discovery students are encouraged to ask big questions: What kind of public health professional do I want to become? Do I want to work in health research? Do I want to work on creating health policies to support our society to be healthier? Maybe I want to work in the medical field (as a doctor, nurse, physician’s assistant, etc.) and an undergraduate degree will help launch me on this journey. Maybe I’d like to work in communities—here in the U.S., or abroad—educating people to live healthier lives. How can I serve? And how can I take advantage of the opportunities that UMass uniquely offers?

Two tracks were created within the major--- Social Science and Science----to serve various academic and career trajectories. Professional or graduate school is the most widely-cited reason students choose the science track. Science track requirements incorporate some of the professional health school prerequisites for entry, including sequences of Chemistry, Anatomy and Physiology, Physics, and higher math. By accommodating for some of these prerequisites, students have the opportunity, while pursuing pre-professional foundations, to also develop a perspective on public health that is more connected to their career path. Many of the science track, pre-med students report greater satisfaction with the choice of public health over biology as their major.

Students who select the Social Science track are able to explore even more broadly, areas of interdisciplinary interest. Upon graduation, students following this track find work in public health departments, as research assistants in hospitals, or doing entry level work in legislative offices and human services agencies. Students also seek out opportunities with CityYear, AmeriCorps, Peace Corps, and Teach For America. While some social science track students directly enter an MPH program, more go on to work in public health or a related field and enter graduate school a year or two later.

Both tracks require eight public health courses, including a maximum of three departmental electives. Both tracks allow flexibility and encourage exploration of a variety of public health science areas. Because the field of public health is interdisciplinary and broad by nature, students are expected to proactively explore where they fit into the field. This is accomplished by taking a wide variety of courses, participation in internships and community service projects, studying abroad, and getting involved in the public health club and other activities offered through the program.

The eight required departmental courses for Social Science track students (taught through the Department of Public Health) are:

- My Body/My Health – an overview of how individuals make healthy choices and how society influences these choices.
- Health Care for All – an overview of the United States health care system with emphasis on issues relating to unequal access to health service.

Note: Both My Body/My Health and Health Care for All are large lecture courses that many students across the campus take as a general education requirement. These two courses introduce the nature and importance of public health as a field, leading many students to cross the campus and apply for the public health major. Except for these two courses, all our other public health courses are restricted to public health students.
- Introduction to Public Health – an overview of public health and how the five core areas are put into practice.
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- Introduction to Epidemiology – an overview of the science of epidemiology and how it is applied to solving public health problems.
- The Capstone Course – a culminating course allowing students to synthesize and integrate knowledge acquired in previous course work and other learning experiences (i.e. internships, etc.) and to apply theory and principles in a public health real life situation. The student’s final product (poster or presentation) is submitted to the Statewide Undergraduate Research Conference.

Students following the Science Track do not have to take My Body/My Health or Health Care for All. Instead, these students are required to take:
- Introduction to Biostatistics – an overview of how statistics are applied to solve real public health problems.
- Introduction to Environmental Health Practice – an overview of how environmental science is used to solve public health problems. Topics include water, wastewater, solid wastes, food sanitation, vector control, housing, and accident countermeasures.

These courses are available for Social Science track students, but are not compulsory. A description of the major course requirements can also be found at: [http://www.umass.edu/sphhs/public_health/academics/undergraduate/DescriptionoftheTracks.html](http://www.umass.edu/sphhs/public_health/academics/undergraduate/DescriptionoftheTracks.html)

Three public health electives are also required. Health Training Methodology and Practice, Peer Health Education, and Citizen’s Guide to Public Health are three popular courses. Internship credits also fall into this elective category, and while not required, experiential learning in the field is highly encouraged. Students find this option to be useful in applying classroom experience to the real work of public health.

With only eight required public health courses the program counts on curriculum throughout the university to complete the student’s knowledge for a liberal arts foundation in public health. This is accomplished by requiring all students to take basic mathematics, statistics and other introductory courses in the natural and social sciences. Students also take six courses in what we call the Collateral Field. The collateral field component is designed to ensure the kind of background knowledge that supports critical thinking and creative problem-solving for current public health problems. The collateral field allows students to focus on a particular area (psychology, political science, or anthropology, for instance) in which to either double major or minor in, or develop their own topically-focused curriculum (such as international or women’s health). Students report being surprised by the connections they make as they learn about fields outside of public health, and then see how those areas impact and integrate within the field. This very naturally helps students develop an academic and/or professional direction.

As mentioned above, internships are not required but play an important role in the education of our students. Students may take up to nine credits, which is equivalent to 375 hours of work for a public health or other health organization. During internships students keep a weekly journal of what they are learning and write a final paper incorporating classroom concepts with their real world experience. Along with the invaluable experience of bringing classroom learning alive, internships take on another important role. It has been our experience that few students walk out of a specific course and say, “Now I know what I want to do with my life,” but that is exactly what happens with many of our students when they come back from their internships.

This spring a 4+1 BS/MPH program was approved by faculty senate. In this program students with a very high cumulative GPA (3.5) may accelerate their learning by taking graduate level public health courses in addition to their undergraduate courses in their junior and senior year. Required internships, additional summer courses, and a practicum allow the best and brightest students who were already taking advantage...
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of proximity to the graduate school opportunities to pursue an MPH with only one additional year of course work after their BS. The course load is heavy, so we anticipate only a small number of students to apply. In fact, while ten students showed interest this spring, only three submitted a formal application and two were accepted. Acceptance into the program does not guarantee admittance into the Graduate School. Separate application is still necessary, along with GRE scores. The 4+1 simply offers the structure and support for high achieving students to move more rapidly through coursework.

LESSONS LEARNED

The Fast Growth of the Public Health Major: As mentioned earlier, because we are a new major and the field of public health at the undergraduate level is fairly new we do not have many students applying for the major right out of high school. Consequently, when we designed the major we planned for slow growth and boy were we wrong!

Several public health faculty had been advising undergraduates who individually designed their own public health major (Bachelor Degree with Independent Concentration is a small program on campus) and we had noticed an increase in undergraduate students interested public health since 2000, but we did not anticipate the incredible popularity of the new major.

As one of the fastest growing major on campus we do not see any slowdown in sight. Plans are being developed to accommodate up to 600 students in the next several years. To manage our growth several systems have been put in place or are in the planning stage. They are:

- An application to apply to the major was established early on. (See: [http://www.umass.edu/sphhs/public_health/academics/undergraduate/ugradapplication.html](http://www.umass.edu/sphhs/public_health/academics/undergraduate/ugradapplication.html)). The application process was established not to limit the number of students that could enter the major but to help them realize this is a self discovery major where we are not going to hand them a course sequence, or say, “when you graduate you’ll get a job doing ______.” This is a major where students need to be comfortable exploring who they are and what it means for them to learn about the field of public health.

- Keeping required courses small has not been easy, and all required class sizes have grown. The Capstone course started with one section of 25. Next spring we anticipate accommodating almost 120 students. We are exploring different pedagogies to build small group work into large classes. Two public health faculty were awarded spots in the Provost’s Initiative for Team-Based Learning and will be putting some of the newly built team-based focused classrooms through their paces. These classrooms, with a capacity for 69 students, are designed for exactly he sort of group and collaborative work that public health is based on.

- **Group & Individual Peer Advising vs. Faculty Advising:** The major began with one faculty member managing several programs in the department. Within two years we hired a full time faculty director of the major. This new Director immediately began developing a peer advising program that has been very successful. Due to the level of flexibility in course selection, it quickly became evident that faculty advising needed to be specific to student interest rather than for course selection. A student who’s interested in sexual health has a number of faculty to go speak to. A student who wants to know about Education or Psychology courses for their collateral field interest in international education will find much more information by going to the peer advising center, which is staffed with trained peer advisors supervised by the Program Director.
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Peer advisors apply for the position as a public health internship. Along with rigorous training and staffing of the advising center, peer advisors take a seminar where they develop leadership skills, investigate public health topics affecting their peers in higher education, and together, plan and hold large group advising sessions each semester prior to registration. Given the interdisciplinary nature of the program, students in the major do not move as a cohort from course to course, but the large group advising sessions have become a way for students to come together as a community (the public health club is another). Students who meet with the peer advisors report that having another student to talk to who both understands the major and the questions the student has, is reassuring and fuels confidence. The peer advisors report that the internship is an excellent opportunity to learn more about the field, articulate that to their peers, and gain leadership skills.

Developing an Internship and Career Data Base: When the program started, students were encouraged to develop their own internship sites by contacting faculty, organizations they were interested in, and family and community contacts (for summer opportunities especially). In addition, the first program director had worked extensively in the community, and at the program’s inception, reached out to local organizations, letting them know there were undergraduates available for internships. Currently, internship information comes to the director from various channels faculty, national, state and local organizations—including governmental public health offices—and alumni. Currently, we are building an internship and employment database that students will be able to access on their own. In addition, through the public health club, events sponsored during National Public Health Week, and guest speakers for various classes, alumni are invited to speak on panels and share their experience in the field. This establishes the public health sciences program as a place where networking and career planning are part of the learning environment. As the industry works to solve the problem of the anticipated public health worker shortage, development of alumni ties to the program and current students is an important step.

Curriculum-faculty needs: Being based in an accredited program has many benefits: The faculty are a great resource for students, and we expect, over time, more collaboration between undergraduate and graduate students. New course proposals and bi-level courses (one number for undergrads, another for grads, with appropriate work expected for each but taught by the same instructors), have shown promise. The learning curve for graduate faculty can be exciting and challenging, by turns. The program director offers occasional faculty dialogues in order to have deeper conversations about the difference faculty experience in teaching undergraduates and graduates. Instructors share strategies and pedagogical concerns freely, and it’s been an opportunity for collegiality to grow in the undergraduate program.

Thoughts for Developing Your Own Undergraduate Public Health Major: The faculty involved in developing, managing and teaching in the undergraduate public health program love the program and the students! Why? One big reason is because the program is designed to be student-learning centered. Educational leaders such as David Kolb, Malcolm Knowles, and Paulo Freire and their theories are followed to the best of our abilities. Students take an active lead in what they learn and how they apply it. The more they do, the more they become committed to public health. The program views the development of enthusiastic, committed, and knowledgeable public health workers as evidence of our success.

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