

INSIGHTS IN PUBLIC HEALTH

Training Today's Students to Meet Tomorrow's Challenges: Undergraduate Public Health at the University of Hawai'i at Manoa

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Insights in Public Health is a monthly solicited column from the public health community and is coordinated by HJMPH Contributing Editors Tetine L. Sentell PhD from the Office of Public Health Studies at the University of Hawai'i at Manoa and Donald Hayes MD, MPH from the Hawai'i Department of Health in collaboration with HJMPH Associate Editors Lance K. Ching PhD, MPH and Ranjani R. Starr MPH from the Hawai'i Department of Health.

Abstract

The University of Hawai'i at Manoa (UHM) has long provided public health graduate education. The University's Office of Public Health Studies (OPHS) has recently started to offer a Bachelor of Arts in Public Health (BA PH) degree in response to the growing need for professionals in the health field. The purpose of this paper is to describe how UHM operates the BA PH and how the program complements OPHS's mission and goals. First, we describe the overall scope of the BA PH within OPHS and within UHM. Then we provide examples of how the BAPH program and past undergraduate student projects align with OPHS's four main goals: (1) education, (2) research, (3) service, and (4) program development.

Introduction

The primary focus of public health is to improve health and quality of life through the population-based prevention and treatment of disease and other physical and mental health conditions, through surveillance of cases and the promotion of healthy behaviors. In 2008, the Association of Schools of Public Health (ASPH) estimated that over 250,000 public health workers will be needed in the United States by 2020.¹ Public health workers are a multidisciplinary labor force that includes health program administrators, researchers, planners, policy analysts, epidemiologists, biostatisticians, program administrators, environmental health specialists, and more. The ASPH anticipated the retirement of 110,000 public health professionals and the need for qualified replacements. They also anticipated the need for new healthcare positions to coincide with the rising incidence of chronic disease and the subsequent need for more interventions and research.¹ In addition to workforce needs, the Institute of Medicine (IOM) has emphasized the importance of public health knowledge among US citizens, as issues like climate change and Zika gain importance and relevance. Thus, the IOM recommended accessible public health education for all undergraduate students.²

The health care field is growing generally. In 2014, there were nearly 20 million jobs in the health field, which accounted for more than 13% of the nation's total workforce.³ The federal Bureau of Labor Statistics' (BLS) estimated that the health field employment rate grew faster than the rate of employment in all other sectors during the time period between 2004 and

2014. Within the field, public health professionals function broadly—positions include surveillance, administration, regulation, promotion, delivery, evaluation, and many other duties that support national healthcare.³ The BLS predicted that the subsequent decade will have a 60% increase in healthcare jobs, making it the fastest-growing occupation.³

Traditionally, public health training has been at the graduate level, particularly with the Masters in Public Health as the core degree. Yet many previous publications⁴⁻⁷ have identified the importance of public health education at the undergraduate level and emphasized the need for engaged citizens to emerge as future health professionals.⁸ Further literature supports the introduction of education in health promotion as early in academic training as possible, then broadening concepts of prevention over time.⁹ The report¹⁰ additionally emphasizes the value of integrating both an emphasis on practice and a liberal arts framework into public health undergraduate curriculum.

For these reasons, in 2014, the Office of Public Health Studies (OPHS) at the University of Hawai'i at Manoa began offering a Bachelor of Arts in Public Health (BA PH) degree. This initiative was in response to local demand for, and national trends in, public health training. The development of BAPH programs was further supported by the Council on Education for Public Health (CEPH), the nationally recognized accrediting body for public health schools and programs.⁵ OPHS is accredited by CEPH, and has aligned its goals based on specific criteria set by this national accrediting organization. Among a range of criteria, CEPH specifically requires BA PH degrees to provide both a general and public health-specific educational foundation in science, behavioral studies, and statistics, and mandates demonstration of public health skills (eg, written and oral communication), as well as cumulative and experiential activities.

For more than 50 years, the University of Hawai'i at Manoa (UHM) has provided graduate training in public health, first as the School of Public Health and now as the OPHS. Since the first graduating class in 1967, more than 7,000 individuals have earned an MPH, MS, PhD, or DrPH in public health. The addition of the BA PH degree has helped attract more students into the field by raising awareness of public health as a career

choice. Having a BA PH degree prepares students to enter the public health workforce more quickly and builds a pipeline into graduate public health training. For students interested in other professions, such as medicine, nursing, law, and business, a BA PH provides a solid foundation in education about individual, community, and global health.

The purpose of this paper is to describe how UHM operates the BA PH and how this program aligns with OPHS's mission and goals. We will describe the overall scope of the BA PH within OPHS and within UHM. Then we provide examples of how the BA PH program responds to OPHS's four main goals: (1) education, (2) research, (3) service, and (4) program development. Undergraduate student projects contribute to these goals; in this paper we provide examples for each of the four goals.

Bachelor of Arts in Public Health at the University of Hawai'i at Manoa: Overall Scope

The primary goals of the BA PH degree are to (1) meet the needs of the public health community, locally and globally, (2) to prepare undergraduate students for successful careers in the public health workforce, and (3) to prepare students for transition into graduate degree programs. There are multiple levels of BA degree requirements due to various UHM and CEPH requirements. This paper focuses on a major milestone on the pathway to graduation, the Applied Learning Experience (APLE). However, there are many other areas for reinforcement/mastery throughout the undergraduate curriculum. Coursework is open to students across campus, specifically through the introduction to public health class, which additionally serves to expose university students to public health as a discipline and career pathway. This introductory class provides general education in the form of required diversification in social science (DS) credit. There are no pre-requisites for the introductory class, and in many ways it is used as a gateway to prepare students for further courses in public health. Within UHM, students entering the undergraduate public health program are either new students to the university, or began their college careers in pre-nursing or as exploratory (undeclared) students.

The BA PH program is an option for students interested in diverse health care options and specific health care graduate programs (including medical school or graduate-level nursing). In articulation with graduate education, public health graduate degrees provide specialization-specific education and skills training, while the BA PH provides a broad exposure and macro-scale preparation for future careers in health. As such, a bachelor of arts degree in public health is both a meaningful degree on its own, but also a strong complement to another degree in health care.

Mission and Goals of Office of Public Health Studies

The mission of OPHS is "to advance the health of the peoples of Hawai'i, the nation, and the Asia-Pacific region through

knowledge, discovery, innovation, engagement, inclusion, and leadership".¹¹ Preparing students for future occupations in a wide array of exciting career fields within public health is a critical objective for the BA PH. The BA PH is designed to educate undergraduates interested in public health and/or health profession training in the basic concepts of public health education, practice, and research. The BA PH also helps meet the departmental goals: education, service, research, and program development. Specific goals and examples of how they are met are provided below.

Education Goals

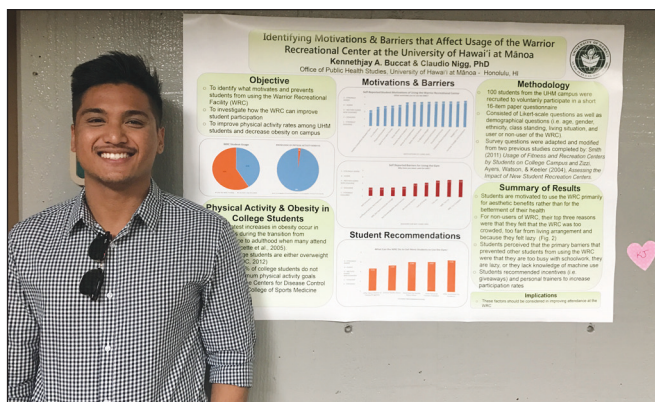
- To recruit and retain a diverse and qualified student body.
- To offer required and elective courses and practicum experiences that facilitate student mastery of public health competencies.
- To assure graduates master the core competencies of their degree.
- To offer a broad variety of public health practicum opportunities, with a focus on Hawai'i, the Pacific, Asia, and Indigenous peoples.¹¹

The educational goals of OPHS highlight diversity and emphasize skill mastery through coursework and experiential activities. UHM is uniquely situated to serve diverse Asian and Pacific populations, which should also be reflected in the student body. The OPHS Diversity Plan and Recruitment Policies and Procedures identifies priority areas and establishes specific strategies which guide OPHS student, faculty, and staff representatives in efforts, both on-campus and off-campus, to recruit and enhance the diversity of our student body and faculty. Specifically, recruitment efforts target local high school students and seek to promote awareness of public health jobs and degrees. The program hopes students from Hawai'i and the Pacific will be inspired to return to their communities after graduating and join the local public health workforce.

The BA PH degree program provides coursework and experiential opportunities that facilitate student mastery of public health competencies. The primary opportunity for experiential learning is through the APLE, a required service-learning/research project for BA PH students. Students are required to participate in the OPHS Undergraduate Summit, a public forum where junior-level students present project proposals for their APLE and seniors share their completed projects as academic posters. Coursework complements these efforts through three introductory core courses, in three ways: (1) providing new, incoming undergraduate public health students with a strong foundation in core public health knowledge; (2) exposing students to both a breadth of public health principles, and a depth in application of those principles to a local and global health setting; and 3) initiating the development of written and oral communication skills as a foundation of an undergraduate degree program. There are additionally public health course requirements focused on public health biology and an introduction to

epidemiology, as well as opportunities for students to diversify their public health education through elective coursework.

Kennethjay Buccat is an example of an undergraduate student whose project served the needs of the local, on-campus community. As an undergraduate who graduated from Campbell High School, Mr. Buccat developed an interest for working to improve health and physical activity among his college peers. His undergraduate APLE identified the factors that affect the usage of the Warrior Recreational Center at the University of Hawai'i at Manoa, which opened to UH Manoa students in the fall 2015. Specifically, Mr. Buccat conducted a quantitative assessment of current undergraduate students and identified barriers to their use of the on-campus Warrior Recreation Center. He worked on this project in collaboration with physical activity researcher and public health faculty member, Dr. Claudio Nigg.



Kennethjay Buccat presenting final poster at the OPHS Undergraduate Summit on December 2016.

Service Goals

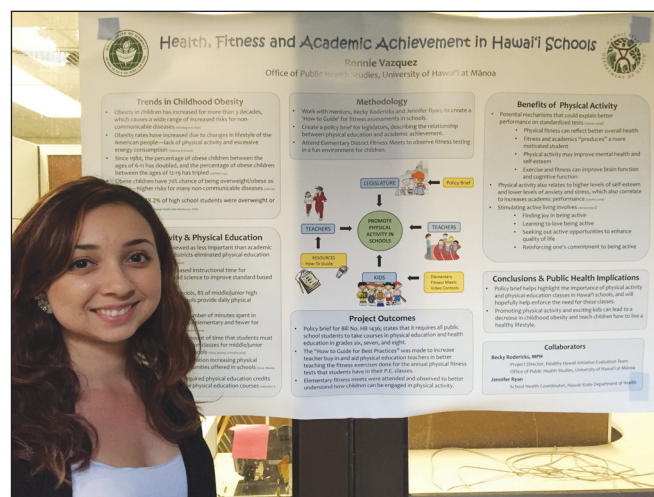
- To be an active partner in providing continuing education to the public health workforce in Hawai'i.
- To provide consultative and direct services to community, state, federal, and international organizations in support of the program's mission.¹¹

Service-learning is crucial for comprehensive public health education as a form of experiential learning that values social justice and community collaboration. The authors explain, "while relatively new to public health, service-learning has its historical roots in undergraduate education and has been shown to enhance students' understanding of course relevance, change student and faculty attitudes, encourage support for community initiatives, and increase student and faculty volunteerism."¹² Service learning is a key component to the BA PH, and is inte-

grated into the curriculum during several courses. For example, PH 202 (Public Health in Hawai'i) requires students to identify examples of public health in their local communities through photographs, and separately, to participate in an 'Aina (Land) Connection Experience, which promotes a hands-on understanding of Hawaiian values and culture while working in a local community setting. Service learning is also a major component of the APLE, which is also referred to as the undergraduate capstone, as described in the report.¹³⁻¹⁴

Three classes make up the capstone series for undergraduates, which foster critical thinking and facilitate students' real-world application of public health knowledge. The capstone series guides students over the course of three semesters as they develop an interdisciplinary applied learning project, which they execute and present under the guidance of a mentor. The first course, PH 480, introduces students to a range of Public Health programs and projects. In this class the students develop their own project and initiate a proposal. Students also learn how to write a resume and learn basic research methodology. The second class, PH 485, guides students through the APLE. Students create a memorandum of agreement with a mentor and monthly blogs about their progress. Students also have opportunities to meet with faculty and an advisor for support. In the final course, PH 489, students finalize and present their APLE projects. Students practice written and oral communication in class and in the field. This capstone gives students the opportunity to receive training and gain applied, real-world experience that they can prepare them for employment or graduate school.¹³⁻¹⁴

Ronnie Vazquez is an example of an undergraduate student whose project focuses on collaboration between the University of Hawai'i at Manoa and other agencies throughout the state. After attending Kapolei High School, Ms. Vazquez graduated in December 2015 with her Bachelor of Arts degree in Public



Ronnie Vazquez presenting final poster at the OPHS Undergraduate Summit on December 2015.

Health and minor in Spanish, with Honors, and is currently transitioning towards a clinical career in nursing. Throughout her APLE, she demonstrated an interest and passion for improving wellbeing and physical activity among youth through a project centered on Health, Fitness, and Academic Achievement in Hawai'i. She worked on this project in collaboration with the Healthy Hawai'i Initiative program and their evaluation team through the Hawai'i Department of Health. In her work for the project she attended fitness meets, spoke with physical education teachers, reviewed the literature, helped film techniques needed to conduct fitness testing in order to create an instructional guide, and created policy briefs for legislators. Her contributions demonstrated a very practical application to address state-level health policy, increase student engagement in physical activity, and support teachers through the Hawai'i Department of Education. Deliverables from her project are currently being shared with policymakers in the state, as well as being used by the Hawai'i Departments of Health and Education to help communicate the importance of childhood obesity and physical activity opportunities in the school setting.

Research Goals

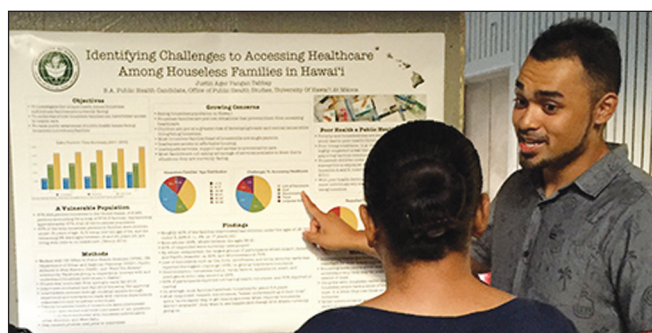
- To discover and create new knowledge, evaluate health service needs, and apply research with an emphasis on Hawai'i, the Pacific, and Indigenous peoples.
- To disseminate research findings through publications and participation in local, national and professional societies.
- To involve students as active participants in research and evaluation projects.¹¹

OPHS is currently accredited by the Council on Education for Public Health (CEPH). CEPH accreditation criteria for undergraduate programs include a requirement to provide foundational knowledge for research.¹⁵ The BA PH courses incorporate these criteria, while also providing diverse perspectives through electives on Indigenous health and other topics of local importance.

Students further apply this research foundation to their APLE, where they begin applying research and service-learning skills. One of the first tasks they complete for their capstone is a written project proposal, including a literature review, on a public health topic of interest. This contributes to the synthesis of knowledge, as students are encouraged to explore issues of local relevance. After completing their proposed projects under the supervision of an approved mentor, they return to the classroom in a subsequent semester to write up their final results, outcomes, and experiences in a final report. The APLE meets OPHS research goals in two ways: (1) under mentorship students participate in research and evaluation both locally and abroad; and (2) students gain experience writing and presenting their research in public and private settings. Students also create academic posters of both their proposals and final projects, and present their posters during the OPHS Undergraduate Summit, a public on-campus forum, during respective semesters.

Following presentation at the OPHS Undergraduate Summit, students have used their completed posters to share information at academic and professional conferences and with community organizations, both locally and abroad.

Justin Tabbay is one example of an undergraduate student whose project applied the OPHS research goals. An alumnus of Farrington High School, Mr. Tabbay graduated with his BA PH in December 2015 and is currently a graduate student in an accelerated nursing degree program. Throughout his time in the BAPH program he demonstrated an interest and commitment for working with disadvantaged populations, particularly houseless/homeless populations. His undergraduate APLE focused on a qualitative investigation of access to health and barriers to health care resources among houseless/homeless populations on O'ahu. His findings have been shared at public forums and are currently in preparation for publication in an academic, peer-reviewed journal.



Justin Tabbay presenting final poster at the OPHS Undergraduate Summit on December 2015.

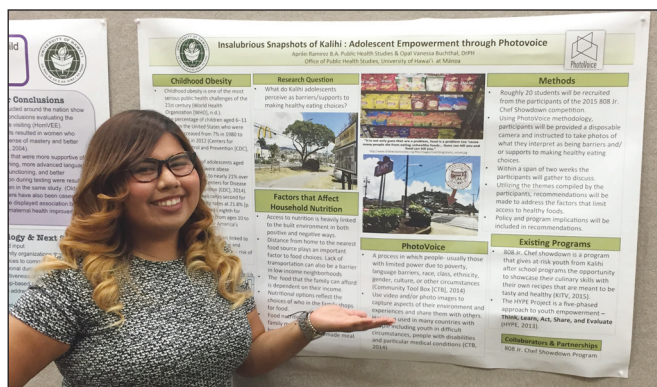
Program Development Goals

- To ensure academic excellence by systematically evaluating the program and incorporating findings in program development.
- To ensure academic excellence by garnering adequate resources for delivery of a quality public health program.
- To improve the abilities of faculty, staff, and students to work with diverse populations.¹¹

OPHS trains faculty members to mentor, advise, and teach undergraduate students. OPHS faculty are encouraged to serve as APLE mentors, but other UHM faculty and community leaders are also appropriate candidates for mentorship. APLE mentors provide learning opportunities that employ students in research projects or program activities.¹³ The BAPH curriculum guides students through the APLE by incorporating the skills and knowledge necessary for a smooth transition into graduate programs or the public health workforce. An emphasis is placed upon quantitative skills, written communication skills, community engagement, oral communication skills, and hands on experience within the public health field. Life skills such

as organization, professionalism, and resourcefulness are also incorporated into public health coursework and experiences.

Aprilei Ramirez is an example of an undergraduate student whose project focused on collaboration and mentorship. As a graduate of the Farrington High School Health Academy, Ms. Ramirez developed an interest in public health and improving nutritional access among youth. Working in collaboration with Farrington High School youth, her APLE focused on utilizing Photovoice, an emergent, qualitative, and participatory methodology, to engage adolescents living in the Kalihi area in sharing their perspectives on healthy eating and the local food environment.¹⁶ This project is additionally an example of faculty mentorship, as the study was conducted under the guidance of OPHS faculty member and experienced Photovoice expert, Dr. Vanessa Buchthal. Following graduation with her BAPH, and minor in Ilokano, in May 2016, Ms. Ramirez has continued on to seek her Masters in Public Health degree, specializing in Social and Behavioral Health Sciences, from the University of Hawai'i at Manoa's Office of Public Health Studies.



Aprilei Ramirez presenting at the HPHA Conference on October 2015.

Conclusion

The creation of the BA PH responds to local and national demand for a diverse health workforce.^{1-3, 17} Offering a BAPH program at UHM serves to increase awareness of public health occupations early in the academic careers of undergraduate students. Efforts have also been consistently made to develop an undergraduate curriculum that expands public health educational capacity at UHM and aligns with current OPHS departmental goals in the areas of education, research, service, and program development. OPHS strives to provide students in the program the knowledge, tools, and skills necessary to successfully gain entry into the public health workforce or entry into graduate programs. To date, there are an estimated 160 declared Public

Health majors, and the program has graduated 55 BA PH students since its inception. Recent graduates have progressed to graduate programs in public health and nursing, have gone on to participate in service projects abroad, and have transitioned into entry-level positions in a variety of health-related disciplines. It is the hope of the program that through provision of bachelor-level public health education, graduates will go on to improve the health of our local communities and state overall.

Acknowledgements

We would like to acknowledge the Bachelor of Arts in Public Health graduates who shared their work in this paper: Kennethjay Buccat, Aprilei Ramirez, Justin Tabbay, and Ronnie Vazquez. We also gratefully acknowledge their mentors: Dr. Opal Vanessa Buchthal, Dr. Claudio Nigg, Rebekah Rodericks, & the Healthy Hawai'i Evaluation Team. Much appreciation also to Dr. Kathryn Braun, Dr. Robert Cooney, and Michelle Tagorda for their contributions to undergraduate program development.

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