

New Program Proposal

Program Name: Public Health, BA
Department: Health Sciences

Sharon Harlan, Chair

College: Bouvé College of Health Sciences

Contact: Steve Zoloth, Professor and Director, Undergraduate Program in the Health Sciences
s.zoloth@northeastern.edu

Part I. Program Description

Describe the program under consideration, including its purpose, degree level, unique aspects, focus, clientele, program start date and length, total number of credit hours, and proposed implementation date.

New Degree: Bachelor of Arts in Public Health

Start: September 2021

Credit Hours: 130

Implementation Date: September 2021

The Department of Health Sciences's undergraduate program is proposing a Bachelor of Arts (BA) in Public Health. This new bachelor's degree will complement our existing major, the Bachelor of Science (BS) in Health Science. In the US there are more than 80 accredited undergraduate programs, and a few of them, including the top schools nationally, offer both BS and BA degrees in public health. We anticipate that the new BA program will be fully accredited by the Council on Education in Public Health, as our current BS program holds that accreditation.

Why a new major at Northeastern? There are two reasons. First, public health is a field that relies on individuals with a broad range of backgrounds, knowledge, and skills. Our current program, the BS, has long had a primary focus on preparing students for further clinical education, such as medicine or the Physician Assistant profession. These students must demonstrate a strong scientific knowledge base in Biology and Chemistry to prepare them for their clinical careers.

Over the past several years, we have observed an increasing number of our students are choosing graduate education in public health, health administration, law, policy, or the social and behavioral sciences rather than medicine. Our own Plus One BS/MPH degree is attracting 20 students annually. Additionally, our current first-year class has many combined majors, all students using public health as a fundamental part of their undergraduate education and future careers. We believe that extensive coursework in the natural sciences is not as necessary for students who are not on a clinical track. We would like to provide an alternate pathway for students to learn and develop extensive knowledge in public health along with a solid grounding in the social and behavioral sciences.

The second reason is frankly that the current pandemic has situated public health front and center in our society. From health communication to vaccine distribution, from understanding human behavior to challenging the impact of structural racism, the public health professional is crucial and essential to addressing these numerous challenges. We believe that the demand for an educated graduate, certainly one with the experiential education provided by Northeastern, will continue to grow. We anticipate that the BA degree will attract more students to our program, students who do not want to pursue advanced clinical education, and for whom advanced study in the sciences is not a necessity.

Our program will follow the general framework of accredited BA programs across the country. We will require two semesters of language and introductory biology courses focused on human health. We will use our existing public health core: community and public health, biostatistics, epidemiology, health communication, program planning, and policy - as the basis for the degree. In addition to the language requirement, six courses from specific areas on society and behavior, global and cultural aspects of health and disease, policy, law, and administration, drawn from other NU Colleges will set the Public Health, BA apart from the Health Science, BS.

In summary, what will be the difference between our current BS degree and the proposed BA degree? Our BS degree, as discussed above, has a foundation in the natural sciences and allows students to take the necessary science requirements for entry into any one of the clinical professions. Our proposed BA is for those students with an interest in the sociocultural factors shaping health, public health policy, or administration. They may enter directly into a public health position such as health educator, researcher, or program manager in nonprofit or governmental positions, but more commonly will pursue graduate education in public health, policy, law, business, or social and behavioral sciences.

Part II. Program contributions to the university's mission

Program contributions to the university's mission: How does the proposed program support the college and university missions?

Northeastern 2025 declares that "building sustainable human communities is a global challenge of our times". Critical to any community is the health of its members, and it has long been recognized that health is determined by factors that lie far outside the hospital room or physician's office. This major will allow students to study, understand and act to ameliorate sociocultural factors such as structural racism, housing instability, poverty, food insecurity, environmental pollution, and discrimination.

Our BA Public Health program focuses directly on finding solutions to these barriers to health faced by communities both in the United States and globally. Our program brings a new group of learners to the forefront; students who are interested in making an impact on healthcare policy, delivery, or practice without entering a clinical profession. We hope to educate "problem solvers, agile thinkers and creators' who can combine multiple disciplines to create solutions to health care problems that only "human minds are capable of." (NU2025) We will work to ensure that the new degree will attract a diverse group of learners, increasing diversity and representation in all fields of public health who will in turn represent and serve the communities most in need of health services. Public Health is also a cornerstone of Bouvé College, whose vision expands the definition of health from "treating the sick to advancing the quality of life throughout one's lifetime." (Bouvé Strategic Plan) The BA program allows our students to take an interdisciplinary approach to health, one that is grounded in the biological sciences and expanded and informed by studies in the social and behavioral sciences and the humanities. Students will be well positioned for "a lifetime of learning, capable of networking across boundaries and disciplines." (NU2025)

Will the proposed program link with related programs within the university and with similar programs at other institutions? If so, how?

As our program aligns with the social sciences and humanities, we will link closely with other departments and programs in the university. Through our large network of combined degrees, we have existing relationships with Khoury, CSSH, CAMD, COE, DMK, and COS. We are also home to a large group of interdisciplinary faculty who bring their disciplinary practice to bear on critical health issues. We are excited about linkages across the campus that are focused on health in the broadest sense, from cultural studies to human services and law.

Since our BS, MPH and Ph.D. programs are well established, we already have strong existing relationships with Boston's public health communities, from local health departments to our colleagues in university and hospital settings. Our extensive co-op network in those organizations will expand to other employers as we create additional opportunities for our students. Our collaborative MS in Health Informatics with Khoury, allows us to connect directly with cutting edge industry leaders in health data analytics, informatics, and telemedicine. All our connections will be invaluable as we pursue co-op and capstone opportunities for our students.

Part III. Program Market Analysis

a. What is the projected demand for the proposed program? What national, state, or local data can you provide to support the need for more people to be prepared by this program at this level? Describe employment opportunities in the field. What evidence is there that the program will attract high-quality students? Market surveys are desirable to support these predictions. Undergraduate program proposals should include a statement from Enrollment Management summarizing any available market survey data (or noting the absence of such data).

Enrollment Management believes that the prospect for this major is excellent. We have included their market survey (at the end of this document) for the BS Health Science degree, which they believe should be similar for a BA Public Health degree.

A major goal of this program is to prepare students for graduate education in public health, public policy, health care administration, law, social work, urban affairs, and planning. However, we do expect some students to enter the public health workforce directly after completing their undergraduate degree and data indicate that the outlook for entry level employment is strong and expected to grow.

Workforce Analysis:

Between 2009 and 2019 state and local public health sectors lost an estimated 26,000 jobs due to funding cuts in state and local budgets. As far back as 2010, the US Department of Health and Human Services issued a call to action to remedy these problems, with the *Healthy People 2020* document including as an objective: "Increase the proportion of 4-year colleges and universities that offer public health or related majors and/or minors." The 2010 Affordable Care Act included federal funds for reinforcing the public health infrastructure, but that funding has been cut every year by Congress. According to the Trust for America's Health (TFAH), the result of this habitual underinvestment is "a public health infrastructure unprepared to meet 21st century health

challenges. The COVID-19 crisis is a stark illustration of the degree to which the public health system needs to be rebuilt"

In addition, The Public Health Workforce Interests and Needs Survey (sponsored by Association of State and Territorial Health Officers - ASTHO) found that the state public health workforce is "generally lacking in several key skills and is faced with a growing number of retirements." ASTHO concluded that, "These trends combine to create critical challenges to the ability of states to effectively respond to threats to the public's health." They further suggest that 'greater engagement with the nation's schools and programs of public health is needed to recruit younger people into the (state) workforce to address the need for a more robust pipeline and increase the proportion of the workforce with public health training.'

Currently, experts in public health are calling for at least a \$4.5 billion annual investment to rebuild the public health infrastructure (TFAH). The federal public health budget hopefully will increase, in the light of the grim toll from the continuing pandemic. We believe that this will lead to an increased demand for both entry level and graduate trained public health experts.

Entry level public health workers contribute to several areas including health marketing, health education, research, and policy analysis, in both nonprofit and governmental positions. Even before the pandemic, the Bureau of Labor Statistics estimated "much faster than average" (12%) growth over the next decade for both community health workers and health educators, typical entry level public health positions. On the business side, entry level positions in health services management are expected to grow by 30% by 2030. Therefore, we expect a robust job market for students desiring to work immediately following graduation

b. List any similar programs offered by competitors in both the Boston and broader markets.

Competitors in Boston Metro Area:

Institution	Public Health BA Degree
Simmons University	YES, both BA and BS degree in Public Health
Boston University	NO, only BS Health Sciences
Tufts University	NO, only BA in Community Health
Boston College	NO
UMASS	NO, only BS Public Health Sciences
Harvard	NO
MIT	NO

Competitors in broader market:

Institution	Public Health BA Degree
UCONN	NO
Cornell University	NO, only BS degree in Global & Public Health Sciences
Ithaca College	NO, only BS in public and community health. no BA public health major
Rutgers University	NO, only BS public health degree
Emory University	NO
University of Michigan	YES, BA Community and Global Public Health
University of California, Berkeley	YES, BA Public Health
University of Washington	YES, BA Global Health

Make a compelling case for why Northeastern should initiate a new program in competition with such programs.

This is an undergraduate major, and we currently compete regionally as well as nationally for top students. This new degree does not have significant regional competition and we believe that we will fare well nationally. Our traditional advantage of experiential education is a major plus for students pursuing a public health degree. Our new major along with our existing BS in Health Sciences will give Northeastern a visible and attractive set of degrees in this rapidly growing field.

c. Which existing degree programs, if any, may be predicted to lose students if students are recruited into the new program? What gains and risks are involved for existing programs at Northeastern?

We do not believe that we will seriously impact existing programs but there might be a modest reduction in our Bachelor of Science major since students might find that the BA option is a better fit with their career goals. We do not expect major shifts, however, since the proposed BA does not require the basic sciences that are necessary for clinical careers. On the other hand, students in other colleges may find that this degree is a better fit with their interests.

Part IV. Program requirements

a. Admission criteria and process

We will admit student via the existing Northeastern University undergraduate enrollment process. EMSA will include this major in all recruiting activities, publications, and information sessions. Students will be admitted to the Department of Health Sciences in Bouvé College. Bouvé College undergraduate recruiting includes information days, virtual and in person visits to campus, email, and webinars.

b. Degree requirements

1. Credit hour requirements

130

2. Experiential components

Students must complete an experiential requirement and can do up to 2 co-ops.

3. Minimum academic standards in addition to university requirements (if applicable)

C or better in required core courses (will follow Bouvé progression policies)

4. Requirements, as applicable, such as residency requirement, qualifying examination, comprehensive examination, proposal defense, language or tool requirements, field component, teaching, thesis, or dissertation requirements. For PhD programs, state the point at which doctoral students become degree candidates.

Students must fulfill the university's language requirement for a BA but no other additional requirements.

Part V. Program Assessment

a. List the student learning outcomes for this program.

Upon satisfactory completion of the Public Health, BA Program, graduates should be able to:

Elements and Functions of the US Healthcare System:

Critique how the healthcare system and public policies impacts healthcare access, quality, and outcomes.

Role of Public Health:

Apply the core values, concepts, and functions of public health to address a major public health challenge.

Social Determinants of Health:

Explain the socio-economic, behavioral, biological, environmental, and other factors that impact human health and contribute to health disparities.

Research Methods and Analytic Strategies:

Describe the basic concepts, methods, and tools of public health data collection, use and analysis.

Program Implementation:

Design a project that uses the fundamental concepts of program implementation including planning, assessment, and evaluation to address a public health challenge.

b. Where will the learning outcomes be published? Include specific URLs if they are known.

They will be published on the Bouvé College of Health Sciences Program Learning Outcomes webpage: <https://bouve.northeastern.edu/health-sciences/learning-outcomes/>

c. Other than GPA, what data/evidence will be used to determine that graduates have achieved the stated outcomes for the degree (e.g., surveys, interviews, artifact evaluations)?

The program will evaluate student artifacts in core courses for direct evidence as well as gather indirect feedback through surveys that will be completed by students and co-op employers. Additional direct evidence will be gleaned from evaluation of specific capstone projects, when relevant. For instance, an evaluation of a student's work who conducted a capstone project that was a health education program would be relevant additional evidence for the fifth learning outcome, "Design a project that uses the fundamental concepts of program implementation including planning, assessment, and evaluation to address a public health challenge."

d. Who interprets the evidence? What is the process for interpretation?

The program manager oversees the process of the evaluation and partners with the program director and associate program director to prepare a summary of the findings. The summary of the findings will be shared with the Department of Health Science's Undergraduate Program Committee. The committee is comprised of faculty who teach the targeted courses as well as faculty who teach other core courses in the major. Discussion of the findings will occur annually in the Spring semester so that instructors who are teaching that semester can implement quick changes as needed but also so that program faculty can propose additional recommendations for changes in other requirements within the curriculum. The group will also set a timeline, with benchmarks, for implementing changes to the curriculum.

e. In the case of a PhD program, what are the procedures used for incorporating individualized development plans and annual review of students into program assessment?

n/a

f. Describe how assessment results will be utilized to improve the program's effectiveness.

The results will be utilized to adjust course content and activities as well as provide a reflection on how well students are prepared to meet the overall goals of the program. Additionally, experiential components will also be discussed as opportunities for making program improvements, such as co-op positions, research with faculty, and capstone projects.

g. Provide a timeline for assessment of the program's success.

One of the 5 learning outcomes will be assessed each year utilizing AEFIS software. After the individual outcomes are reviewed, the results will be compiled into a comprehensive review of all of the results of student success in demonstrating the program learning outcomes. The comprehensive review will be useful for the program faculty to examine the success of the program and determine what steps need to be taken for improvement in the subsequent years.

Part VI. Program accreditation or adherence to licensing standards (if applicable):

a. Identify the accrediting/licensing body.

Council on Education in Public Health (CEPH)

b. Describe any communication with the accrediting/licensing body.

We will contact CEPH after our program is approved and matriculates students. We will request that our current MPH and BS accreditation be expanded to include the new BA degree.

c. Provide a timeline describing the steps needed to achieve accreditation.

In Fall 2021, we plan to submit the necessary paperwork to the Council on Education in Public Health that demonstrates how the program meets accreditation requirements; a response granting approval and program accreditation would be expected in 30 days. The approval would result in the inclusion of the new BA degree in the list of CEPH accredited programs at Northeastern – along with the MPH and the Health Science, BS degree. The next full accreditation review of all NU programs will occur in 2024 and the BA program will be included in the necessary self-study and site visit.

d. Indicate any costs/resources required to comply with accreditation/licensing requirements.

The addition of the new bachelor's program requires a one-time \$500 fee to add the program to CEPH accreditation but our total annual fee does not change. When the self-study and site visit occur in 2023-2024, there will be fees for that process but it would not increase based on the addition of this program.

Part VII. Resources

a. Assess the faculty strength and expertise currently available to the program and identify any additional faculty resources needed to produce a strong program known for excellence

- 1. PhD program proposals should include a statement from the college(s), indicating a concrete plan to provide 5-year, 12-month per year funding to all new PhD students.*

n/a

- 2. For any college that is new to offer any PhD program, a justification consistent with NECHE criteria should be provided in the proposal regarding the qualifications of its faculty and a research base (e.g., number of research active faculty, faculty expertise, external funding, publications, etc.) that can support a sustainable PhD program.*

n/a

3. *List the current tenured and tenure-track Northeastern faculty who are expected to teach as core faculty in the new program and briefly describe their major accomplishments in research, scholarship, or creative activity in the area of the program.*

Steve Zoloth

Professor and Director, Health Science, BS Program

Matthew Miller

Professor

Dr Miller is an expert in injury and violence prevention. His research encompasses intentional and unintentional injury, with an emphasis of firearm related violence and suicide prevention that focuses on nature of the agent of injury and the contextual aspects of the physical and social environment that can be modified to prevent death and reduce injury severity without necessarily affecting underlying behavior. In addition to empirical work in injury prevention, Dr. Miller's scholarship includes pharmacoepidemiology and work on the fundamental and often unrecognized tension between research and therapy in clinical trials. Dr. Miller is Assistant Editor of the journal Injury Epidemiology and a recipient of the Excellence in Science Award from the American Public Health Association.

Alisa Lincoln

Professor

Professor Lincoln's research examines the way that social exclusion and marginalization both contributes to and is a consequence of poor health, and specifically mental health. She examines questions related to social factors and their relationships with mental health and mental health services focusing on how social disadvantage impacts people's mental health and their experiences and outcome in mental health care. Her work has examined public mental health services, racial and ethnic disparities and health, and literacy and health.

Her current work includes:

3. Examining the meaning and impact of literacy (reading, numeracy and aural) in the lives of people with serious mental illness and the ways in which limited literacy serves as a barrier to recovery and participation both in the US and Australia;
4. Examining the ways discrimination, neighborhood social capital and civic participation relate to mental health status and vulnerability to radicalization among Somali young adults in four cities in the US and Canada;
5. Examining disparities in access to and outcomes of mental health care;
6. Developing public evaluation partnerships and research projects.
7. Developing innovative models by which we can increase the inclusion of communities and stakeholders in the process of research and has led some of the first federally funded studies exploring the use of Community Based Participatory Action Research (CBPR) in mental health care.

Her multiple research teams also prioritize the inclusion of students through a shared mentorship approach including undergraduates, master's level, doctoral level, and post-

doctoral students. She has over 20 years of continuous research funding from sources including NIMH, NIMHD, SAMHSA, and NIJ. Finally, she is the Chair of the Mental Health Section of the American Sociological Association, and an Elected Fellow in the New York Academy of Medicine (NYAM) and the American Psycho-Pathological Association (APPA).

Kristin Madison

Professor

Dr. Madison applies an interdisciplinary perspective to her research and teaching in health law, health policy, and health economics. Her recent research topics include the use of financial incentives to encourage healthy behaviors and the implications of health care quality reporting for health care law and policy. She has published work in *Health Affairs*, *Health Services Research*, *JAMA*, *the American Journal of Preventive Medicine*, *the Community Mental Health Journal*, *the Journal of Law, Medicine & Ethics*, *the UC Davis Law Review*, *the North Carolina Law Review*, and *the University of Pennsylvania Law Review*, among other journals.

Matthew Goodwin

Associate Professor

Dr. Goodwin is an Interdisciplinary Associate Professor with joint appointments in the Bouvé College of Health Sciences and College of Computer & Information Science, where he is a founding and key faculty member of a new doctoral program in Personal Health Informatics and Directs the Computational Behavioral Science Laboratory. Goodwin is also a Visiting Associate Professor in the Department of Biomedical Informatics at Harvard Medical School, an Adjunct Associate Professor of Psychiatry and Human Behavior at Brown University, and the former Director of Clinical Research at the MIT Media Lab. He has previously served on the Executive Board of the International Society for Autism Research and the Scientific Advisory Board for Autism Speaks. He has over 20 years of research and clinical experience working with children and adults on the autism spectrum and developing and evaluating innovative technologies for behavioral assessment and intervention, including video and audio capture, telemetric physiological monitors, accelerometry sensors, and digital video/facial recognition systems.

Sara Lopez-Pintado

Associate Professor

Dr. Lopez-Pintado has recently been awarded with a R21 grant from National Institute of Mental health at NIH. Her research is focused on the development of robust nonparametric and computational methods for ranking, visualizing, and analyzing high-dimensional data such as functions, medical images, and time series. She has published several relevant and well cited papers in the field of robust functional data analysis.

Beth Molnar

Associate Professor

Dr. Molnar is a social and psychiatric epidemiologist. She was the PI of the Vicarious Trauma Toolkit (VTT) project, funded by the Office for Victims of Crime, an evidence-informed web-based resource available for organizations that work with people who have experienced trauma, helping organizations take better care of employees who do this empathic work. Current studies include evaluating the development and roll-out of a model intervention to improve organizations of first responders and victim services professionals exposed to vicarious trauma, and efforts to better serve young children in the child welfare system and communities with lower resources who need services for social and emotional disorders. In addition to her university roles, she is also a member of the Board of Directors of the Boston Area Rape Crisis Center (President 2014-2019).

Justin Manjourides

Associate Professor

Dr. Justin Manjourides' current research interests involve developing new statistical methodologies to better analyze spatial and temporal health data in the presence of missing or mis specified information, with specific applications to disease surveillance and occupational health interventions. He is currently working across several NIH, EPA, and CDC funded grants involving research ranging from the estimating the health effects of environmental exposures, risk mapping of drug-resistance tuberculosis, and occupational health and wellbeing interventions for construction workers.

Sara Wylie

Associate Professor

Dr. Wylie's book, *Fractivism: Corporate Bodies and Chemical Bonds* published by Duke University Press is an ethnographic study of the role science-based NGOs played in the emergence of public concerns about the human and environmental health impacts of chemicals used in natural gas extraction, particularly hydraulic fracturing. Recently Dr. Wylie cofounded the *Environmental Data and Governance Initiative (EDGI)*. EDGI is a collaboration of academics and non-profits working to track and respond to changes in U.S. federal environmental governance. Wylie has co-edited with Rebecca Lave *EDGI's 100 Days and Counting* series of rapid response, public reports detailing and contextualizing changes in environmental governance under the Trump Administration. Dr. Wylie is a cofounder of *Public Laboratory for Open Technology and Science*, a non-profit that develops open source, Do It Yourself tools for community based environmental analysis. She received her Ph.D. from MIT's History, Anthropology and Science, Technology and Society (HASTS) Program. Wylie is also a JBP Environmental Health Fellow with Harvard T.H Chan School of Public Health. In 2017 she was recognized by the Collaborative on Health and the Environment (CHE) as one of 20 Pioneers in Environmental Health under 40. Her CHE webinar summarizes her book, work with Public Lab and EDGI.

Laura Senier

Associate Professor

Dr. Senier's research interests include the sociology of medicine and public health, community environmental health, and environmental justice. Her research identifies political, social, and economic barriers in research translation, or the effort to migrate scientific discoveries into clinical and public health practice. She has also studied community mobilization in communities burdened by environmental injustices, in the Boston area and in the upper Midwest. Her work has appeared in *Social Science & Medicine*; *Genetics in Medicine*; *Sociological Inquiry*; *Organization & Environment*; and *Environmental Science & Technology*. She teaches graduate and undergraduate courses in sociology of health and illness, environmental health, environmental justice, and qualitative research methods.

Carmel Salhi

Assistant Professor

Dr. Salhi completed post-doctoral training in developmental cognitive psychology at the Boston Children's Hospital and the Harvard Medical School. His primary research interest is in child and adolescent mental health.

Brady Post

Assistant Professor

Dr. Post's research on health policy and health care delivery systems explores hospital-physician vertical integration (hospital employment of physicians). His research uses large-scale data approaches and quasi-experimental econometric methods. His work encompasses the relationships between Medicare payment policy, provider consolidation, and health care spending. His 2018 article, "Vertical Integration of Hospitals and Physicians: Economic Theory and Empirical Evidence" was awarded Medical Care Research and Review's Article of the Year.

If additional tenure-track faculty will be needed by the program, note whether they will be added by reallocation within the college or by requested new tenure-track lines, and when any new faculty are expected to be hired.

The Health Sciences department is currently recruiting 3 new tenure-track faculty and expect them to begin in FY2022. Each of these new hires could each teach an undergraduate course.

If the program relies on non-tenure-track and part-time instructors for required courses, project what proportion of courses in the new program will be taught by tenure-track faculty, by full-time non-tenure-track faculty, and by part-time faculty. What will be the desired academic or professional qualifications of the program's non-tenure-track faculty?

The program will have a similar utilization of faculty as in the BS Health Science program since this program will share core courses across the BS and the new BA degree program. Our current bachelor's program is taught by approximately:

15% by tenured or tenure track faculty

70% by non-tenure track faculty

15% by part-time instructors or PhD students on teaching assistantship stipends.

The desired qualifications for all faculty who teach in the programs include demonstrated effectiveness in teaching, public health expertise and scholarship generally but also in specific content areas that ground the degree, such as research methods, policy, and health disparities.

Identify any additional non-tenure-track faculty resources needed by the proposed program

The program is likely to need 1 additional full-time teaching, non-tenure track faculty in FY 2023 to address the increase in course section enrollments for the BA degree as the program grows.

b. Describe any space needs for the program.

Space needs will coincide with new faculty hires and will be determined based on space available.

c. Describe library resources needed for the program.

The Library is currently staffed with a Health Sciences Librarian, so no new library resources needed.

Statement from Liz Cheron, Assistant VP Enrollment Management & Dean of Admissions

Dear Professor Zoloth,

We are very pleased to enthusiastically support the establishment of a Bachelors of Arts in Public Health in the Department of Health Sciences, Bouve College. We hear from prospective students that interest in health careers and Public Health has, unfortunately, grown significantly since the onset of the COVID-19 pandemic. Indeed, USNEWS recently singled out undergraduate Public Health majors in an article entitled *“How Coronavirus Spotlights Public Health Major - The COVID-19 pandemic promises to intensify the appeal of this hot field and its growing array of programs at the college level.”*

We believe that a new BA in Public Health, complementing your current successful BS degree will become a welcome addition to Northeastern’s offerings in the health professions. We will be happy to include it in all of our marketing activities and material and work closely with your department and Bouve’s enrollment team in establishing this new major once approved.

Best and good luck!

Liz



Brief Market Assessment: Bachelor's in Public Health

December 15, 2017

Background

Northeastern University's Bouvé College of Health Sciences is exploring the feasibility of a BS in Public Health program. To gauge the market feasibility for this new major, this brief assessment explores employment prospects for bachelor's-level public health graduates, student demand indicators, and the current competitor landscape.

Summary

Professional Demand

- Career prospects for BS in Public Health graduates are moderately strong. In 2017, there were ~500,000 individuals employed in public health related occupations such as *Medical and Health Services Managers*, *Occupational Health and Safety Specialist and Technicians*, and *Health Educators*. Employment in these occupations are projected to increase by 15% into 2027, which is faster than projected growth of 10% across all occupations nationally over this period.
 - Real-time hiring trends further showcase ample job opportunities for public health graduates. There were over 22,000 bachelor's level job postings over the last year seeking candidates with public health credentials, a 28% jump from 2012. Notably, however, employers hiring for public health positions frequently prefer candidates with master's level credentials. This suggests an individual with only an undergraduate major in public health may be less marketable compared to individuals with an advanced degree. A 4+1 program with a BS in Public Health and the MPH in Urban Health could offer students stronger job prospects, assuming they have suitable work experience through co-ops and other practicums upon graduation.
- According to worker profiles in Emsi's Alumni Insight database, the top occupation of public health graduates nationwide is registered nurses, as reported in worker profiles. The top occupation for graduates of Bouvé's BS in Health Science was also registered nurses. Due to this overlap in career outcomes, the proposed BS in Public Health may compete for similar students as the BS in Health Science leading to potential enrollment cannibalization.

Student Demand

- Student interest in public health majors is robust and growing fast according to IPEDS conferral data. From 2012 to 2016, the number of public health bachelor's degrees conferred more than tripled to nearly ~5,000 conferrals.
- There is modest interest in public health as a field of study by Northeastern's admitted students. Public health was the seventh highest area of interest out of 26 among admitted Bouvé students, according to the 2017 Admitted Student Survey.

Competitive Landscape

- There appears to be room for new entrants in the public health bachelor's market; in 2016, there were ~100 public health bachelor's providers, up 191% from 2012 (much faster than the average 5% increase across U.S. bachelor's providers). Even with this increasingly competitive environment, the average number of conferrals per provider continues to rise, from 41 conferrals per provider in 2012 to 51 in 2016.
- The top national providers of bachelor's conferrals in public health include the University of South Florida, Rutgers University-New Brunswick, University of California Berkeley, and UMass Amherst.
- There are few local BS in Public Health providers; They include UMass Amherst, UMass Lowell, Regis College, American International College, MCPHS, and Boston University.

Professional Demand

Worker Profiles

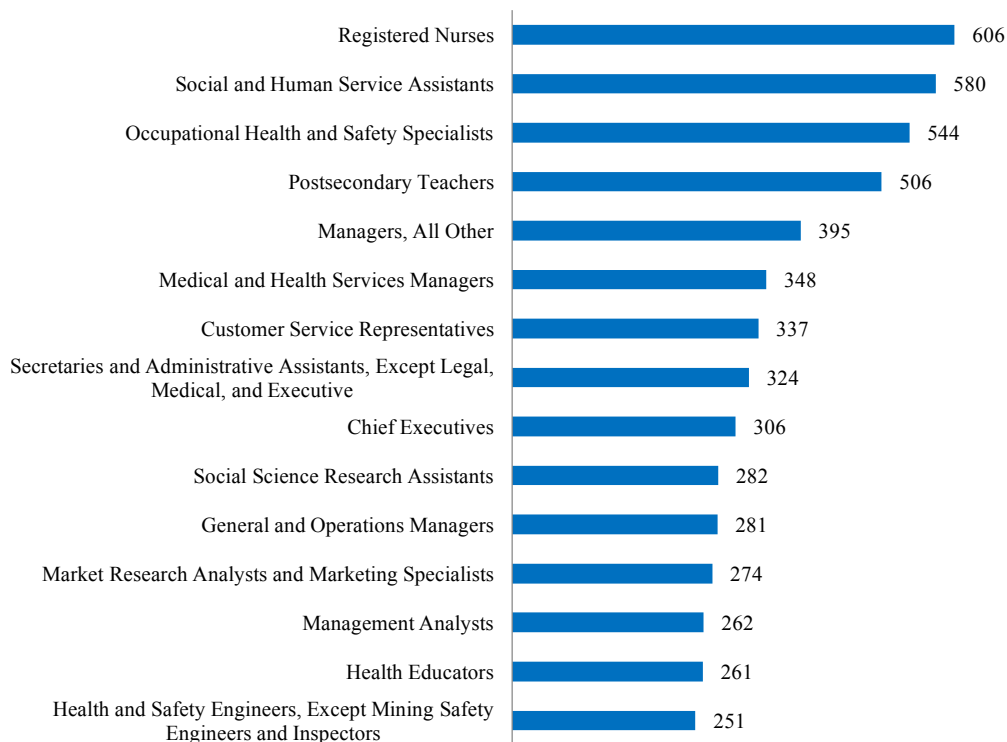
To better understand the career prospects for BS Public Health graduates, this analysis leveraged Emsi's Alumni Insight database. This database holds more than 65 million professional profiles built from resumes submitted to Emsi's parent company, CareerBuilder, and information scrapped from the open web, which includes all the major professional profile sites (e.g. LinkedIn). *Note: This data is self-reported by individuals and provides point-in-time information only.*

There are 17,135 profiles nationally of workers with an educational background in public health at the bachelor's level, according to Emsi's Alumni Insight.¹ The top occupations for public health graduates were *Registered Nurses* (606 bachelor's-level profiles), *Social and Human Service Assistants* (580), *Occupational Health and Safety Specialists* (544), and *Postsecondary Teachers* (506). Some of these occupations, such as *Registered Nurses* and *Postsecondary Teachers*, require secondary credentials; this suggests that public health graduates go on to earn additional credentials after completing their bachelor's degree.

The top occupation for graduates of Bouvé's BS in Health Science program is also *Registered Nurses*; this could be a source of potential cannibalization between the current BS in Health Science program and the proposed BS in Public Health.

Top 15 Occupations Among Public Health Worker Profiles

Source: Emsi Alumni Insight (17,135 Bachelor's-Level Profiles Updated as of 2016)



¹ 'Public Health' degrees are those with the CIP code 51.22

Real-Time Hiring

Burning Glass’s LaborInsight database, a system that mines and allows for the analysis of millions of employer job postings nationally over time, provides insight into the demand for public health professionals. Over the last 12 months, there were 22,467 job postings at the bachelor’s level for a public health degree.² This is a relatively moderate number of postings, as a comparison point, there were 562,888 bachelor’s-level nursing science postings during the same period.³ Bachelor’s-level public health postings increased 28% from Dec. 1, 2013 – Nov. 30, 2014 and Dec. 1, 2016 – Nov. 30, 2017, slightly slower than the 37% increase across all bachelor’s-level postings nationally.

Public Health Job Postings

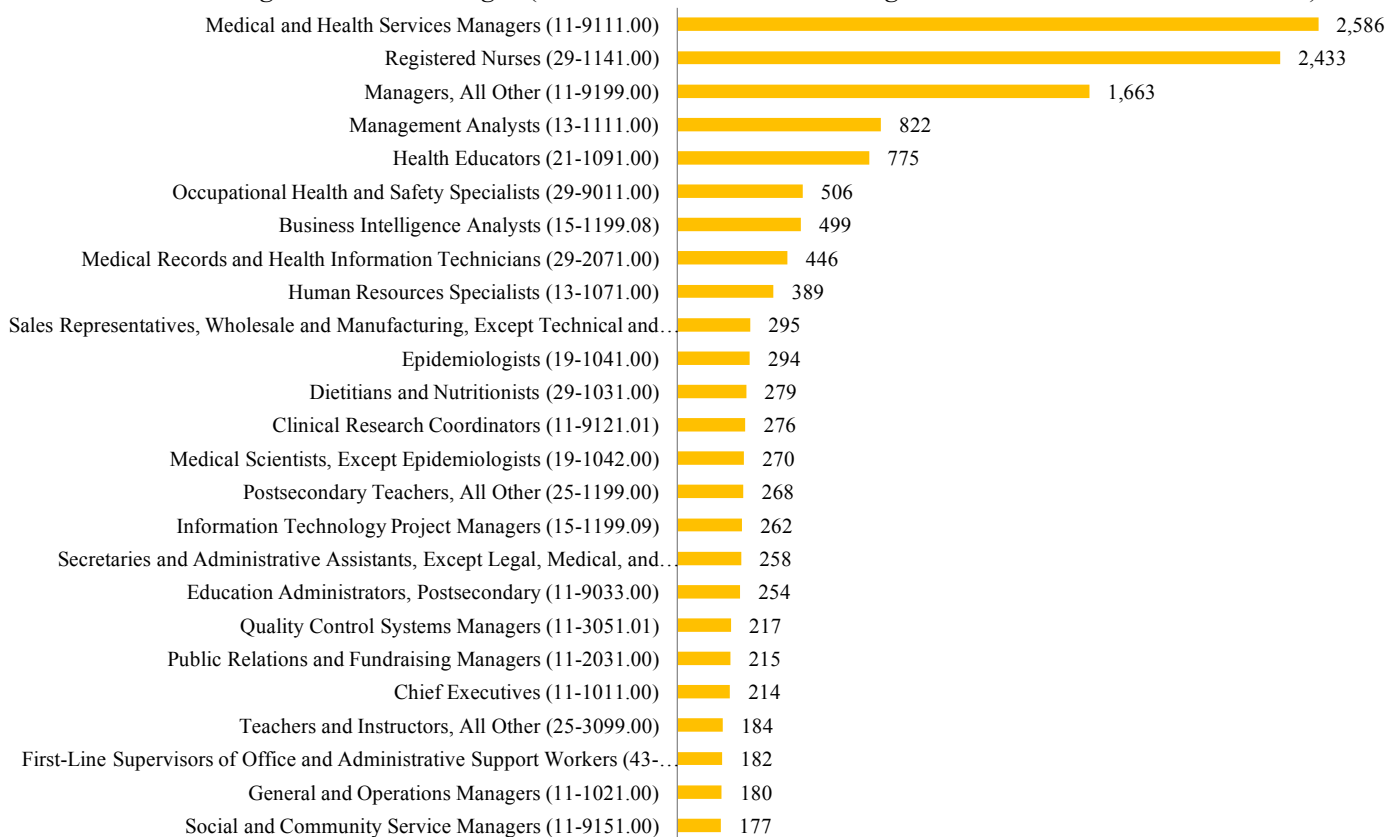
Source: Burning Glass’ LaborInsight (Bachelor’s Job Postings)

	Dec. 2012- Nov. 2013	Dec. 2013- Nov. 2014	Dec. 2014- Nov. 2015	Dec. 2015- Nov. 2016	Dec. 2016- Nov. 2017	% Change 2013-2017
Public Health Program of Study	17,550	19,574	24,689	23,358	22,467	28%
Total U.S. Bachelor’s-Level Job Postings	4,800,406	5,213,696	7,191,404	6,761,929	6,514,036	37%

In the past year, the top occupations seeking public health degrees were *Medical and Health Services Managers* (2,586 bachelor’s-level postings), *Registered Nurses* (2,433), and *Managers, All Others* (1,663). The top occupations listed in current worker profiles and employer job postings are similar, pointing to historical and continued demand for these specific occupations.

Top 25 Occupations Requesting Public Health Degrees

Source: Burning Glass’ LaborInsight (22,467 Bachelor’s Job Postings, December 2016-November 2017)



² ‘Public Health’ degrees are those with the CIP code 51.22

³ ‘Nursing Science’ degrees are those with the CIP code CIP 51.3808, the closest program of study Burning Glass has to a general nursing degree

Projected Employment Demand

To understand future employment prospects for public health graduates, employment projections for a sample of occupations (*Medical and Health Services Managers, Occupational Health and Safety Specialists and Technicians, and Health Educators*) were run based on the Bureau of Labor Statistics and Emsi Analyst’s labor market data. While a public health bachelor’s graduate could pursue a range of occupations beyond *Medical and Health Services Manager, Occupational Health and Safety Specialist and Technician, and Health Educator*, these three offer more direct career pathways for graduates as opposed to occupations such as nursing or teaching, which may require returning to school to for an additional degree or license in order to practice.

These public health related occupations are projected to grow 15% from 2017 to 2027, faster than the average projected growth rate of 10% across all occupations over this period. Employment of *Medical and Health Services Managers* is projected to grow particularly strong at 17% from 2017 to 2027, from ~339,000 employed to ~396,000. Employment of *Health Educators* is also expected to grow faster than the national average, increasing from ~60,000 employed to ~68,000, a 15% growth rate. By contrast, employment of *Occupational Health and Safety Specialists and Technicians* is projected to experience slower than average growth in the next 10 years, from ~97,000 employed to ~105,000.

National Employment of *Public Health Professionals*

Source: BLS/Emsi Analyst

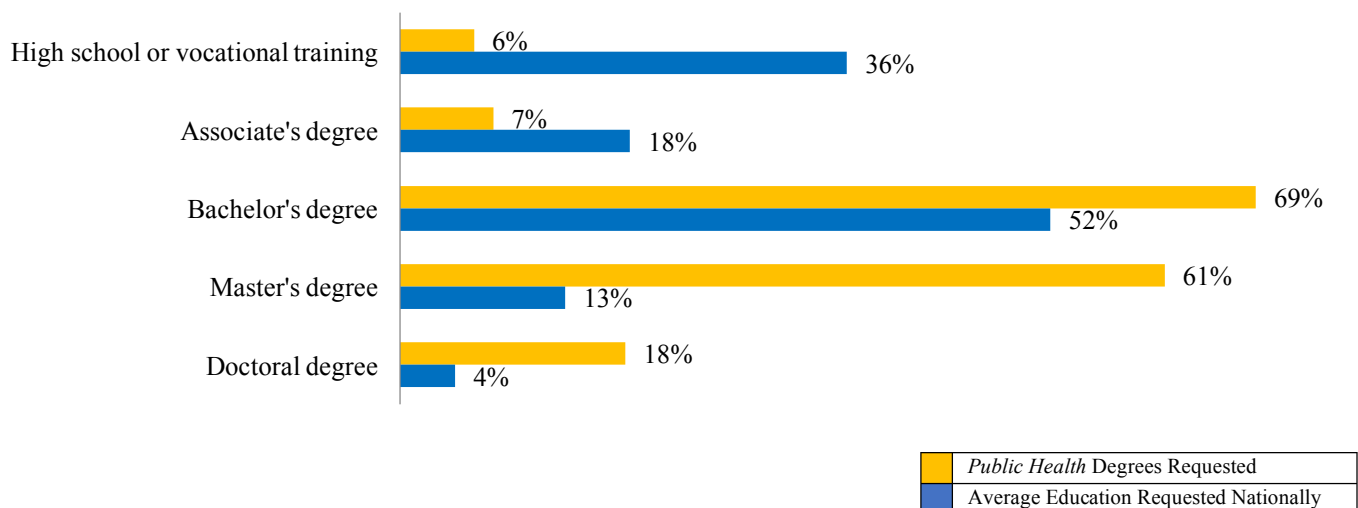
Occupation SOC Code	Occupation	2017	2027	2017 - 2027 % Change
11-9110	Medical and Health Services Managers	338,540	396,120	17%
29-9010	Occupational Health and Safety Specialists and Technicians	97,300	104,784	8%
21-1091	Health Educators	59,709	68,442	15%
	Total across select Public Health occupations	495,549	569,346	15%
	All Occupations	148,827,775	164,149,477	10%

Preferred Education Levels among Employers

The majority of job postings for public health professionals request a bachelor’s degree, according to Burning Glass’ LaborInsight. 69% of job postings seeking a public health degree requested a bachelor’s degree, compared to 52% of job postings nationally on average. Master’s degrees were also highly sought after in this field, with 61% of employers hiring for public health professionals with master’s degrees, compared to only 13% nationally on average. As graduate level education in public health is often sought by employers, a 4+1 program with a BS in Public Health and the MPH in Urban Health could make students more marketable in the workforce, assuming they have ample work experience through co-ops and other practicums.

Advertised Education Requested among Public Health Job Postings

Source: Burning Glass’ LaborInsight (34,798 postings, Dec. 2016 – Nov. 2017)

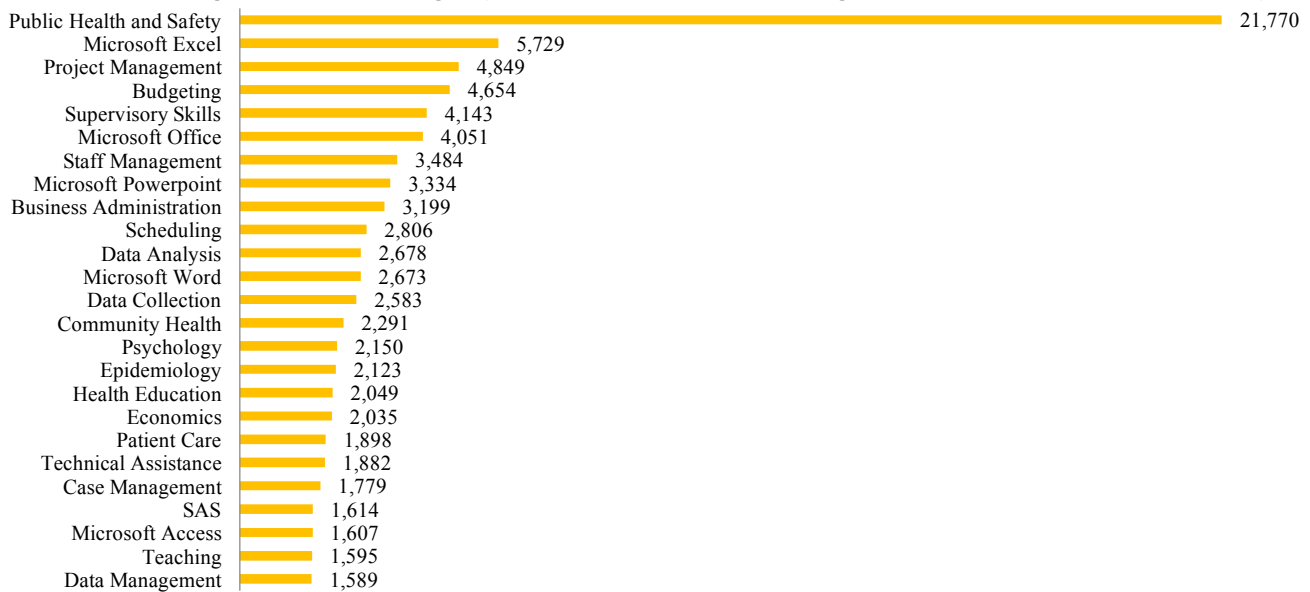


In-Demand Skills

Among public health job postings, the most commonly requested specialized skill was *Public Health and Safety* (21,770 bachelor’s-level postings). Other top health-related skills include *Community Health* (2,291), *Epidemiology* (2,123), *Health Education* (2,049), and *Patient Care* (1,898). Managerial skills (e.g., *Project Management*, *Budgeting*, *Supervisory Skills*, *Staff Management*, *Business Administration*, *Scheduling*) and data analysis skills (e.g., *Data Analysis*, *Data Collection*, *SAS*, *Microsoft Access*, *Data Management*) were also among the top 25 skills requested by employers. Bouvé should consider integrated these desired skillsets into the curriculum.

Top 25 Skills Requesting among Public Health Job Postings

Source: Burning Glass’ LaborInsight (22,467 Bachelor’s Job Postings, December 2016-November 2017)

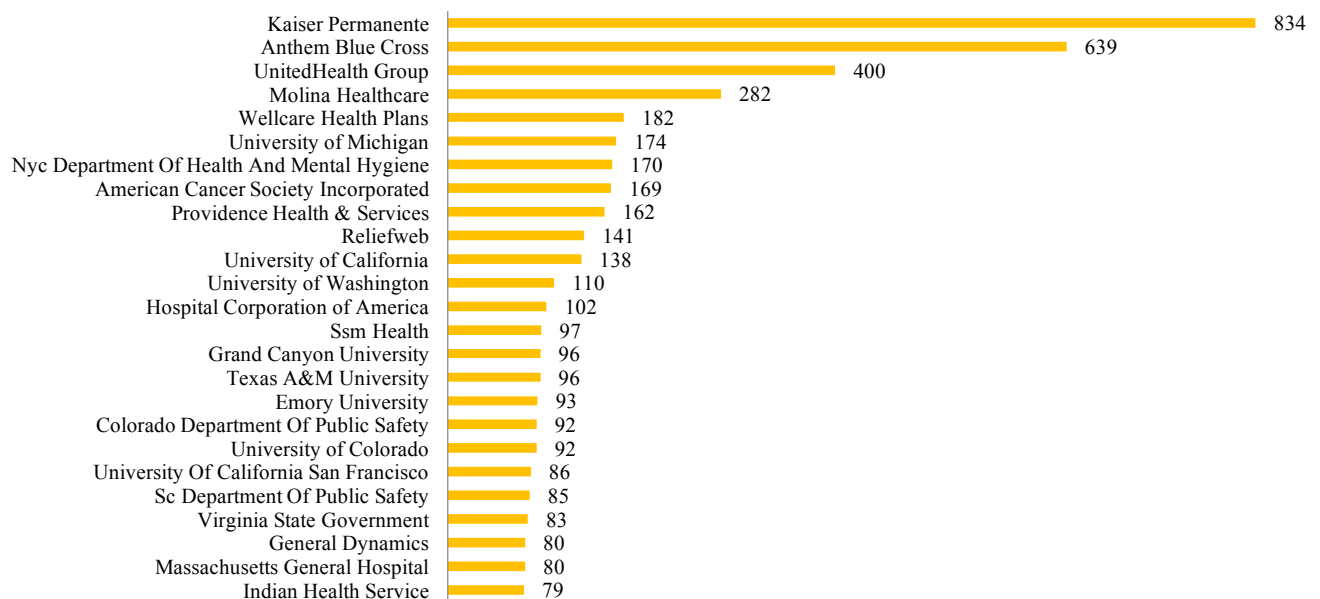


Employers

The top U.S. employers hiring for candidates with public health bachelor’s degrees included several health insurance companies, such as Kaiser Permanente (834 bachelor’s-level postings), Anthem Blue Cross (639), UnitedHealth Group (400), Molina Healthcare (282), and Wellcare Health Plans (182). Public health departments (NYC Department of Health and Mental Hygiene, Colorado Department of Public Safety, Virginia State Government), and higher education institutions (University of Michigan, University of California, University of Washington, Grand Canyon University, Texas A&M University, Emory University, University of Colorado) were also among the top 25 employers. Organizations such as these could be ideal targets for partnership in developing co-ops or providing input for the curriculum of the proposed BS in Public Health.

Top 25 Employers Requesting Public Health Degrees

Source: Burning Glass’ LaborInsight (22,467 Bachelor’s Job Postings, December 2016-November 2017)



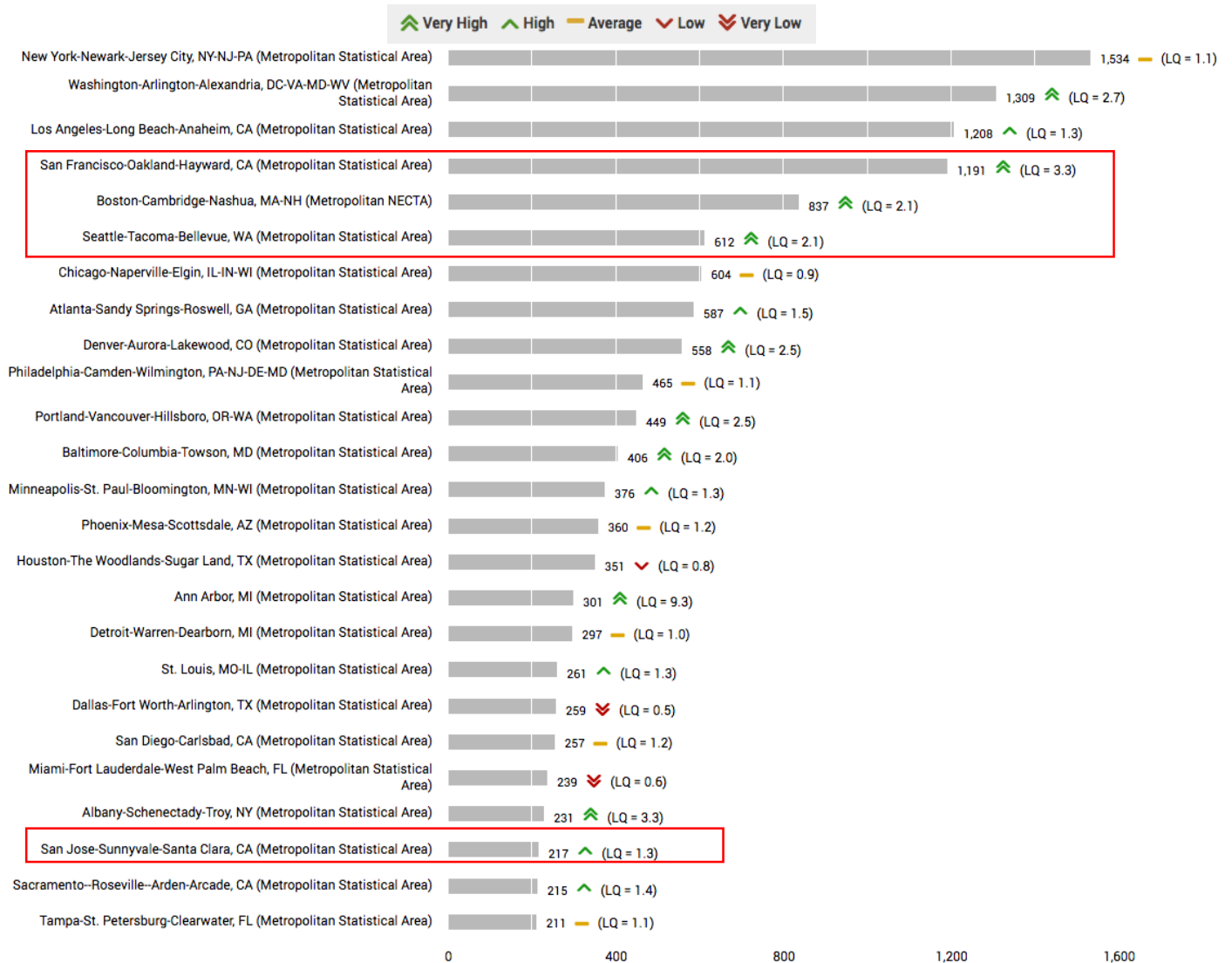
Location

Many Northeastern regional campus metros have higher than average concentrations of employers hiring for public health degrees at the bachelor’s level; compared to a 1.0 national average location quotient (LQ), San Francisco had an LQ of 3.3, Boston had an LQ of 2.1, Seattle had an LQ of 2.1, and San José had an LQ of 1.3, according to Burning Glass’ LaborInsight. In particular, San Francisco, Boston, and Seattle had among the top 10 highest concentrations of bachelor’s-level public health degree job postings in the country, indicating high levels of demand in these regions.

The top locations seeking public health degrees included New York City (1,534 bachelor’s-level postings), Washington D.C. (1,309 postings) and Los Angeles (1,208 postings).

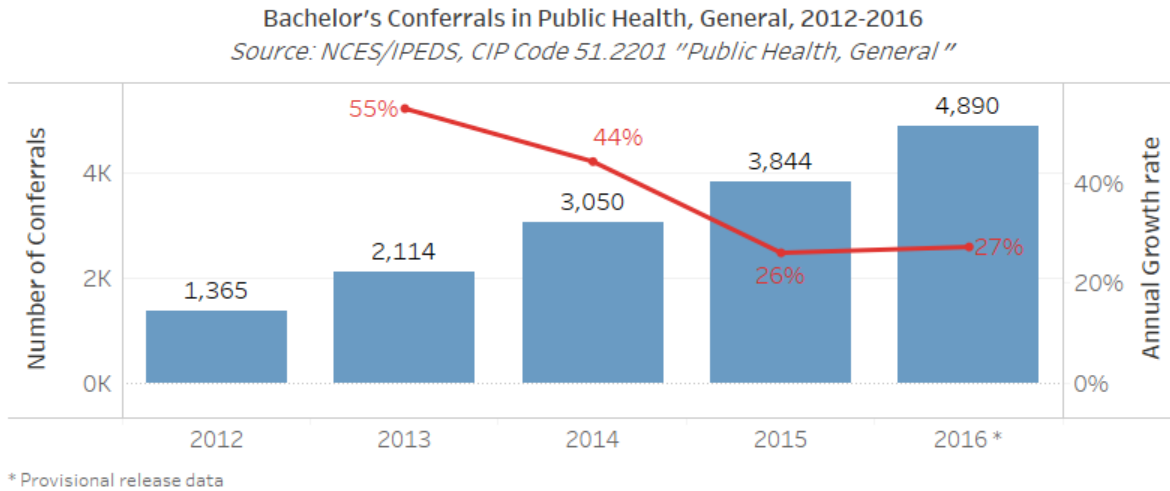
Top 25 Locations Requesting Public Health Degrees

Source: Burning Glass’ LaborInsight (22,467 Bachelor’s Job Postings, December 2016 – November 2017)



Student Demand

The overall number of bachelor's degrees conferred in a public health major is growing rapidly, according to conferral data from the National Center of Education Statistics' IPEDS database. From 2012 to 2016, the number of students graduating from public health (CIP Code 51.2201) programs has more than tripled.



There is modest interest in public health as a field of study by Northeastern's admitted students, according to the Fall 2017 Admitted Student Survey.⁴ Out of 26 health-related fields available as options, public health responses ranked seventh behind pre-medicine, psychology, health professions, pharmaceutical sciences, nursing, and physical therapy.

Health-Related Fields of Interest
Source: Fall 2017 Admitted Student Survey

Health-Related Fields of Interest	N	% of Respondents
Pre-Medicine	712	6.2%
Psychology	513	4.5%
Health Professions	247	2.2%
Pharmaceutical Sciences	201	1.8%
Nursing	140	1.2%
Physical Therapy	107	.9%
Public Health	101	.9%
Health/Health Care Admin/Management	53	.5%
Clinical Psychology	39	.3%
Physician Assistant	30	.3%
Nurse Anesthetist	17	.1%
Foods, Nutrition, and Wellness Studies	16	.1%
Developmental and Child Psychology	16	.1%
Food and Dietary Science	15	.1%
Experimental Psychology	12	.1%
Communication Disorders	9	.1%
Athletic Training	9	.1%
Speech Language Pathology	9	.1%
Exercise Science	9	.1%
Counseling Psychology	8	.1%
Sports Medicine	8	.1%
Registered Nursing/Registered Nurse	4	.0%
Occupational Therapy	4	.0%
Industrial and Organizational Psychology	3	.0%
Dietetics and Clinical Nutrition Services	2	.0%
Optometry	2	.0%

⁴ Respondents were able to select up to two fields of interest. N represents the combined total number of respondents selecting a field of interest for either the first or second field. % of Respondents represents the proportion of respondents selecting that field of interest.

Competitive Landscape

There are increasing numbers of public health bachelor's degree providers, according to NCES; in 2016, there were 96 public health bachelor's providers, up 191% from 2012 (much faster than the average 5% increase across U.S. bachelor's providers). Even with more providers entering the field, the average number of conferrals continues to rise, from 41 in 2012 to 51 in 2016, suggesting room for new market entrants.

Distance programs also increased over this time; there were 16 distance programs for bachelor's public health programs in 2016, up 300% from 2012, much higher than the 89% increase across U.S. bachelor's distance education programs. Distance education programs make up approximately 14% of all bachelor's degree programs in public health.

Bachelor Degree Programs in *Public Health*

Source: NCES/IPEDS (CIP: 51.2201)

Bachelor's	AY 2012	AY 2013	AY 2014	AY 2015	AY 2016	% Change 2012 to 2016
# Providers	33	47	62	77	96	191%
Average # Conferrals per Provider	41	45	49	50	51	24%
# Distance Programs	4	8	12	13	16	300%
# Total Programs	37	58	77	98	116	214%
% of Distance Programs	11%	14%	16%	13%	14%	

According to NCES, the top providers of bachelor's-level public health degrees include *University of South Florida* (319 conferrals in 2016), *Rutgers University-New Brunswick* (309), and *University of California Berkeley* (236). Top competitor providers where declining Bouvé students enrolled in according to the National Student Clearinghouse include *Rutgers University-New Brunswick*, *UC Berkeley*, *UMass Amherst*, *University of Washington Seattle*, *UC San Diego*, *Johns Hopkins University*, *Ohio State University*, *New York University*, and *Brown University*.

Locally, 943 bachelor's degrees in public health were conferred in Massachusetts in 2016, from *UMass Amherst* (227 conferrals), *UMass Lowell* (33), *Regis College* (23), *American International College* (14), and *Massachusetts College of Pharmacy and Health Science* (12). Other local competitors to Bouvé's proposed BS in Public Health include *Boston University's* 4+1 BA/MPH and BS/MPH programs and *Boston College's* undergraduate Global Public Health non-degree program.

Most of the top 25 public health bachelor's providers (e.g., *UMass Amherst*, *University of Washington Seattle*, *UC San Diego*, *Johns Hopkins University*, *Ohio State University*, *Brown University*, etc.) have traditional on-campus programs. However, several providers, (e.g., *Rutgers University-New Brunswick*, *UC Berkeley*, *NYU*, etc.), have online options for non-traditional students.

Top 25 Bachelor's Providers in *Public Health*

Source: NCES/IPEDS, External Search (CIP: 51.2201, AY 2016)

Institution Name	State	Sector	2016 Conferrals	Program Format
University of South Florida-Main Campus	FL	Public	319	On-Campus
Rutgers University-New Brunswick*	NJ	Public	309	Distance Option
University of California-Berkeley*	CA	Public	236	Distance Option
University of Massachusetts-Amherst*	MA	Public	227	On-Campus
Oregon State University	OR	Public	205	On-Campus
University of Arizona	AZ	Public	194	On-Campus
University of Washington-Seattle Campus*	WA	Public	183	On-Campus
Northern Arizona University	AZ	Public	182	Distance Option
California State University-Los Angeles	CA	Public	179	On-Campus
California State University-Northridge	CA	Public	178	On-Campus
Kent State University at Kent	OH	Public	171	Distance Option
University of California-San Diego*	CA	Public	135	On-Campus
Johns Hopkins University*	MD	Private	129	On-Campus
The University of Texas at San Antonio	TX	Public	105	On-Campus
Monroe College	NY	Private	103	Distance Option
Slippery Rock University of Pennsylvania	PA	Public	100	On-Campus
American Public University System	WV	For-profit	95	Distance Option
Southern Connecticut State University	CT	Public	95	On-Campus

The University of Texas at Austin	TX	Public	92	On-Campus
University of Colorado Denver/Anschutz Medical Campus	CO	Public	80	Distance Option
Ohio State University-Main Campus*	OH	Public	76	On-Campus
University of Arkansas	AR	Public	69	On-Campus
New York University*	NY	Private	63	Distance Option
Brown University*	RI	Private	57	On-Campus
Montclair State University	NJ	Public	55	On-Campus

* One of Bouvé's top 40 competitors for Fall Freshmen admits for 2017