MASTER OF APPLIED SCIENCE IN SPATIAL ANALYSIS FOR PUBLIC HEALTH, MAS

Program Overview

The Master of Applied Science (MAS) is a fully online, part-time degree designed for working professionals. Programs focus on emergent industry sectors in public health and health care that have a need for highly skilled professionals. By building on the strengths of the School, they provide unmatched opportunities for advanced training and focus on both local and global health issues. Students are prepared to create innovative solutions through multidisciplinary approaches that apply the latest scientific knowledge. All MAS programs will culminate in a final Integrative Activity. The goal of this activity is for students to synthesize knowledge and skills obtained through coursework in a final project that demonstrates mastery of program competencies, as applied to real-world public health and healthcare questions. Students can complete their degree program in as little as two years but are allowed up to four years.

The MAS program in Spatial Analysis for Public Health (https://publichealth.jhu.edu/academics/mas-in-spatial-analysis-for-public-health/) is an interdisciplinary program. Faculty at the Bloomberg School of Public Health contribute to the program via course development, teaching, and advising students. The topics and concepts allow graduates to effectively design and conduct public health-related spatial analysis by applying knowledge and tools learned in the program.

Students are equipped with the skills to understand, map, analyze and interpret spatial data as they relate to public health. The program will provide learners with skill-oriented training in spatial analysis taught through a comprehensive spatial science paradigm to include courses in spatial data, geographic information systems and spatial statistics. The program also offers training in epidemiology and biostatistics, courses that reflect the breadth and depth of public health and practical skills derived from workshops in professional development.

The MAS program in Spatial Analysis for Public Health is a STEM-designated program. STEM programs are focused on science, technology, engineering and math.

LinkedIn Group

We have established a LinkedIn group for each of the MAS program areas in order to strengthen connections between current students, faculty, and alumni of MAS programs, as well as to facilitate student-to-student peer networking.

Participation is voluntary, but we encourage students to join this professional networking community.

BSPH MAS and Certificate in Spatial Analysis for Public Health (https://www.linkedin.com/groups/8676099/)

Additional Public Health Learning Resources

The Mid-Atlantic Regional Public Health Training Center provides links to many of its online learning resources, as well as external resources, databases and public health organizations. These can be used to supplement learning on a particular topic or provide background material.

Many of these resources are available for free via their website (https://lms.marphtc.pitt.edu/).

The Welch Medical Library at Johns Hopkins has many resources related to research, writing and documentation on their YouTube channel (https://www.youtube.com/c/WelchMedicalLibrary/).

The School has a number of research and practice-related seminar series (https://publichealth.jhu.edu/academics/lecture-series/) that occur throughout the year and contribute to the intellectual community of the School, for students, staff, and faculty. The Bloomberg School has a website (https://publichealth.jhu.edu/practice/resources-for-practitioners/) that provides some additional resources for practitioners as well.

Practitioners can also access dozens of courses from Bloomberg School faculty on Coursera (https://www.coursera.org/jhu/). Practice-focused offerings include courses on topics such as gun violence, food systems, health equity, biostatistics, and epidemiology, among others.

MAS in Spatial Analysis Contact Information

MAS Program Advisers
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Program Requirements

Course location and modality is found on the BSPH website (https://publichealth.jhu.edu/courses/).

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Students will complete 50.5 credits to graduate. The program is designed to be completed in 8 academic terms - two academic years (Sept-May). In addition to the coursework, students must complete an Integrative Activity, where newly acquired knowledge and skills are used to create an applicable activity (e.g., design a study, plot the map and analyze the data) – with a final paper that describes the methodology used and the final assessment. Students can complete their degree program in as little as two years but are allowed up to four years.

Satisfactory Academic Progress (SAP)

The Bloomberg School of Public Health requires students to maintain satisfactory academic progress for the duration of the degree program.

For the MAS program, satisfactory academic progress is defined as follows:

Maintaining a minimum cumulative grade point average of 2.75 and grades of C or better in all required courses. Grades of P are sufficient in courses that are graded as Pass/Fail. Students falling below this minimum should consult with the MAS Program Office and their Academic Adviser in order to develop a course plan to allow them to raise their GPA above 2.75 as soon as possible in order to return to good academic standing.

Failure to maintain satisfactory academic progress as defined by any of the criteria above may be grounds for dismissal from the program, and financial aid status will be affected. Full details of the School's Satisfactory Academic Policy can be found here (https://e-catalogue.jhu.edu/public-health/policies/academic/grading-system/).

Program Plan of Study

Students should follow the plan outlined below if they wish to complete the MAS program in two years. This plan will also allow students to maintain minimum credits needed for financial aid eligibility each term and to follow any prerequisite sequencing. Courses can be taken at a slower pace if needed, so long as course prerequisites are met.

Course	Title	Credits
First Year		
First Term		
PH.550.860	Academic & Research Ethics at JHSPH	
PH.600.601	Seminars in Public Health	2
PH.601.731	Spatial Analysis for Public Health	4
PH.552.603	The Role of Qualitative Methods and Science in Describing and Assessing a Population's Health May be taken during any term offered	0.5
	Credits	**6.5**
Second Term		
PH.601.732	Spatial Data Technologies for Mapping	4
PH.600.602	Seminars in Public Health: Advanced Topics	2
	Credits	**6**
Third Term		
PH.600.701	Introduction to Epidemiology	4
PH.600.612	Professional Development: Writing for Results	2
	Credits	**6**
Fourth Term		
PH.600.711	Public Health Statistics I	4
PH.601.931	Spatial Analysis Lab 1	2
	Credits	**6**
Second Year		
First Term		
PH.600.712	Public Health Statistics II	4
PH.601.615	Online Research Skills for Spatial Analysis for Public Health	2
	Credits	**6**
Second Term		
PH.600.702	Intermediate Epidemiology	4
PH.601.932	Spatial Analysis Lab 2	2
	Credits	**6**
Third Term		
PH.601.733	Applied Spatial Statistics	4
PH.601.805	Spatial Analysis Journal Club	2
	Credits	**6**
Fourth Term		
PH.601.734	Spatial Applications	4
PH.601.880	Spatial Analysis integrative Activity	4
	Credits	**8**
	Total Credits	**50.5**

Integrative Activity

master of applied science (mas) Integrative Activity: Human Subjects Research and Other Activities

This culminating experience will provide Master of Applied Science students with the opportunity to synthesize lessons learned via the application of concepts and techniques. Please note that individual degree programs may have specific guidelines related to their particular Integrative Activity course including, but not limited to the format, presentation, and composition of final course deliverable.

As students begin planning the research for their Integrative Activity within the MAS program, they should please review the information below and proceed accordingly. Regardless of whether an IRB review is required, all MAS students should apply ethical principles in their interactions with humans and/or their data. Please follow the BSPH Ethical Code for Student Activities that Involve Human Interactions.

1. As long as the project is limited to the context of the course or courses if components of the Integrative Activity are spread among more than one course, there is no need for IRB approval, even if the project involves human subjects' research. These types of student projects are considered learning exercises when there is no plan to disseminate beyond the class, School, or affiliated agency.

2. If students do wish to publish their project while they are a student, they will need to test to see if they are conducting Human Subjects Research (HSR) which would necessitate IRB approval. Students can test their project for HSR by using the IRB worksheet or consulting the IRB guidance flowchart. They will need to go to IRB for official/final determination **before** beginning their research in order to be approved for publication. All student-initiated research projects which they intend to publish must have a preliminary review by the IRB Office to determine whether they are human subjects research requiring IRB oversight, unless: (1) the student is working with a Principal Investigator (PI) from another institution, or (2) the PI is adding the student as a student investigator to an existing, IRB-approved study. If students are using human subjects data, they must obtain a determination from the BSPH IRB. If they are collecting primary new data, complete the IRB Office Determination Request Form for Primary Data Collection, or if they are using existing data, complete the IRB Office Determination Request Form for Secondary Data Analysis in collaboration with their adviser and submit it to the BSPH IRB Office e-mail address bsph.irboffice@jhu.edu. Students should be sure to include their adviser in their e-mail submission.

3. If students do not intend to publish the project while they are a student, IRB approval will not be required. However, if the student would be interested in publishing it after graduating from JHU, they should note that the project *must meet the ethical standards of their institution and that many institutions will not allow students to present/*

publish human subjects research without having prior IRB approval. For this reason, we strongly recommend that students consult their organization now if they think that they may wish to publish in the future.

Program Policies

For a full list of program polices, please visit the MAS in Spatial Analysis for Public Health Curriculum page (https://publichealth.jhu.edu/academics/mas-in-spatial-analysis-for-public-health/curriculum/) where students can find our handbook.

PROGRAM COMPETENCIES

The Master of Applied Science in Spatial Analysis for Public Health is an interdisciplinary program. The goal of the MAS in Spatial Analysis for Public Health program is to prepare students from diverse individual and professional backgrounds for positions that utilize spatial data to address public health problems.

According to the requirements of the Council on Education for Public Health (CEPH), all BSPH degree students must be grounded in foundational public health knowledge. Please view the list of specific CEPH requirements by degree type (https://e-catalogue.jhu.edu/public-health/ceph-requirements/).

By the end of the program, students should be able to:

1. Interpret and critique epidemiologic studies addressing public health problems
2. Apply measures of morbidity and mortality to the evaluation and comparison of the health of populations
3. Synthesize how geography affects public health
4. Obtain and transfer information from spatial data technologies into a database appropriate for mapping
5. Utilize a geographic information system to map and spatially integrate public health-related databases
6. Analyze and interpret maps using tools from the field of spatial statistics to describe and interpret distributions of health outcomes in a population
7. Design and implement a spatial analysis protocol for addressing a public health problem