DOCTOR OF PHILOSOPHY IN
THE FIELD OF HEALTH DATA
SCIENCE, APPLIED BIOINFORMATICS
CONCENTRATION

Program Director: K Crandall

The doctor of philosophy in health data science develops data
science leaders for applications in public health and medicine. The
program advances the field by:

• Providing rigorous training in the fundamentals of health and
biomedical data science.
• Fostering innovative thinking for the design, conduct, analysis,
and reporting of public health research studies.
• Providing practical training through real-world research
opportunities at research centers and institutes directed by
departamental faculty.

Students choose one of two concentrations: applied biostatistics or
applied bioinformatics.

The program offers a unique blend of the two disciplines,
which helps practitioners become successful collaborators in
interdisciplinary research. Each concentration focuses on the
foundations of the respective discipline to acquire fundamental
knowledge and experience in the subject area while gaining core
knowledge in the foundations of the other concentration.

ADMISSIONS

Visit the Milken Institute School of Public Health website (https://
publichealth.gwu.edu/) for additional information about academic
programs and information about GWSPH. Graduate admissions
information, including application requirements and deadlines, can
be found on the GWSPH Graduate Admissions website (https://
publichealth.gwu.edu/admissions/graduate-admissions/).

REQUIREMENTS

The following requirements must be fulfilled: 72 credits, including
14 credits in core courses, 15 credits in required concentration
courses, 18 minimum credits in elective courses, a 1 credit in
practicum, and 12 to 24 credits in dissertation research. Additional
requirements include, but are not limited to, completion of a
graduate teaching assistantship program certificate.

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td><strong>Required</strong></td>
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<tr>
<td>Core courses</td>
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<tr>
<td>PUBH 6080</td>
<td>Pathways to Public Health</td>
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<td>PUBH 6421</td>
<td>Responsible Conduct of Research</td>
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<tr>
<td>PUBH 6850</td>
<td>Introduction to SAS for Public Health Research</td>
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<td>PUBH 6851</td>
<td>Introduction to R for Public Health Research</td>
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<td>PUBH 6852</td>
<td>Introduction to Python for Public Health Research</td>
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<tr>
<td>PUBH 6854</td>
<td>Applied Computing in Health Data Science</td>
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<tr>
<td>PUBH 6855</td>
<td>High Performance and Cloud Computing</td>
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<tr>
<td>PUBH 6856</td>
<td>Public Health Genomics</td>
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<tr>
<td>PUBH 6857</td>
<td>Bioinformatics Algorithms and Data Structures</td>
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<td>PUBH 6858</td>
<td>Computational Biology</td>
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<td>PUBH 6860</td>
<td>Principles of Bioinformatics</td>
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<tr>
<td>PUBH 6886</td>
<td>Statistical and Machine Learning for Public Health Research</td>
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<tr>
<td>PUBH 8099</td>
<td>Doctoral Topics (Cross Cutting Concepts in Public Health topic only)</td>
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<tr>
<td>PUBH 8870</td>
<td>Statistical Inference for Public Health Research I</td>
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Concentration-specific courses

15 credits in applied bioinformatics courses.

PUBH 6854 | Applied Computing in Health Data Science       |         |
| PUBH 6855 | High Performance and Cloud Computing            |         |
| PUBH 6861 | Public Health Genomics                          |         |
| PUBH 6884 | Bioinformatics Algorithms and Data Structures  |         |
| PUBH 8885 | Computational Biology                           |         |

Electives

A minimum of 18 credits in elective courses. Students must take
at least 3 credits in biostatistics courses and at least 3 credits in
cognate area courses.

Practicum (teaching/research)

PUBH 8413 | Research Leadership                            |         |

Dissertation research

PUBH 8999 | Dissertation Research (taken for 12 to 24
credits)                                      |         |

Additional requirements

Additional program requirements include but are not limited to
completion of the University’s Graduate Teaching Assistantship
Program Certificate, which includes enrollment in UNIV 0250. *

*Visit the GTAP website (https://gradfellowships.gwu.edu/
graduate-teaching-assistantship-program-gtap/) for additional
information.