

## About the Program

GW's Data Science Graduate Program is an interdisciplinary program that prepares students for data-related careers in roles ranging from financial consulting and policy advising to disaster relief management and computational biology. Developed through a collaborative effort among the Departments of Statistics, Physics, Economics, Mathematics, Geography and Political Science, the program teaches students to make sense of data and contribute informed observations that change the way we live, work and communicate.

## What is Data Science?

Data Science is an emerging field that aims to extract actionable insights from vast arrays of information. It draws techniques and theories from the broader areas of statistics, computer science and mathematics. It has applications in many fields including business, engineering, natural sciences, social sciences, humanities and healthcare.

The explosion of data in today's world is rapidly shaping the landscape of our lives. This has led to an urgent need to process massive amounts of data to obtain

meaningful information. Data scientists are trained to meet such challenges.

Through a structured curriculum that provides foundational knowledge as well as application skills, our students learn how to confront some of the the most complex problems ranging from government and private industry.

## Why Data Science at GW?

The Data Science Graduate Program offers the combined resources of six departments, in addition to numerous unique benefits, such as:

- Interdisciplinary curriculum across a half-dozen specialties
- Partnerships with major organizations in the Washington, D.C., metropolitan area
- One-on-one mentoring from advisors and program directors
- Practical application of problem solving, communication and teamwork skills
- Capstone projects that provide real-world experience

## Degree & Certificate Options

Students may choose from two data science graduate programs:

- Master of Science in Data Science
- Graduate Certificate in Data Science

## Curriculum

The curriculum combines courses in:

- **Methods:** Data management and data analytics; develop expertise in the programming languages essential for data science
- **Applications:** Elective courses in data science applied to a specific knowledge domain
- **Skills:** Leadership, teamwork, project management and communication skills
- **Technology:** Hands-on exposure to data analysis and visualization tools/software

Students work with their advisors to choose coursework suited to their interests and academic goals.

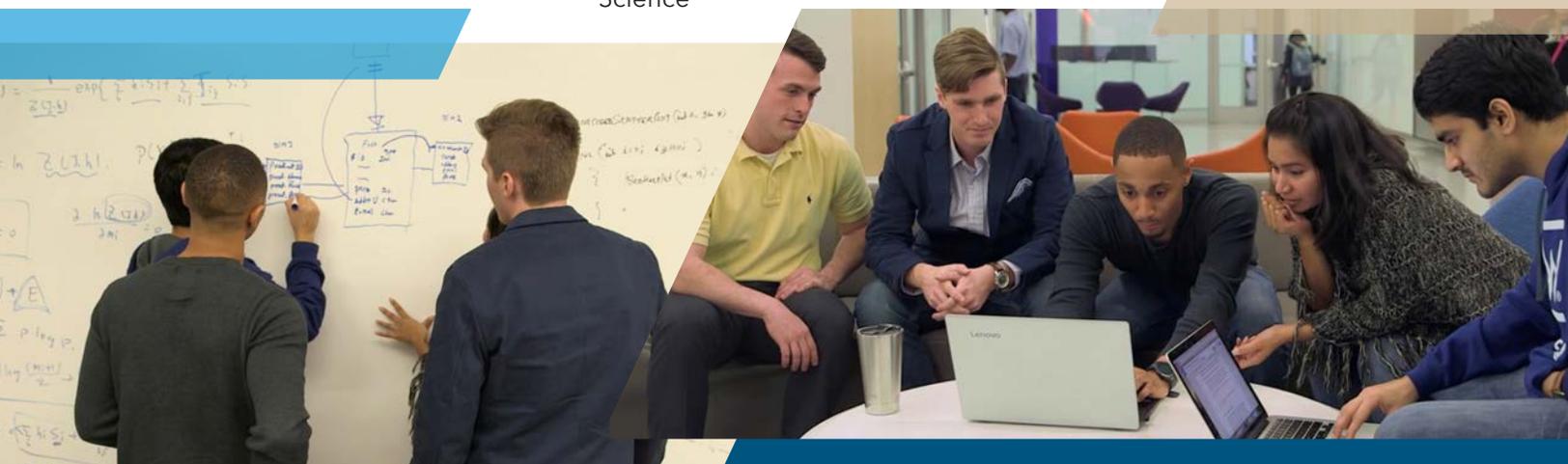
The **MS in Data Science** requires 30 credit hours (10 courses):

- Seven data science courses
- Two domain/application courses
- Capstone course

The **Graduate Certificate in Data Science** requires 12 credit hours (four courses):

- Three data science courses
- One domain/application course

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## Faculty

The interdisciplinary Data Science Program features distinguished GW faculty from the Departments of Statistics, Mathematics, Physics, Economics, Geography and Political Science, including:

### Dr. Larry Medsker

*Director of the Data Science Program*

*Research Professor of Physics*

Research focus: Applied artificial intelligence and neural computing; hybrid intelligent systems

### Dr. Yongwu Rong

*Professor of Mathematics*

*Associate Dean for Research and Strategic Initiatives*

Research focus: Mathematics; computational biology; data-driven mathematics and statistics

### Dr. Chen Zeng

*Professor of Physics*

Research focus: Statistical and computational biophysics; designing proteins of new structure and function; theoretical techniques and computational tools for quantitative analysis and visualization of data for systems biology

### Dr. Michael Mann

*Assistant Professor of Geography*

Research focus: GIS, Python and R computing languages; spacial modeling; econometric techniques for the forecasting of human/natural systems interactions; remote sensing; high performance computing; data visualization; web mapping

### Dr. Tara M. Sinclair

*Associate Professor of Economics, Co-Director*

*GW's Research Program on Forecasting, and Chief Economist of the job listing website, Indeed*

Research focus: Macroeconomic and labor market modeling and forecasting

## Locations

Students may pursue the STEM-designated Data Science Program at GW's Foggy Bottom or Virginia Science and Technology Campus (VSTC).

## Admission Requirements

To be admitted to the Data Science Program, applicants must have a bachelor's degree from an accredited college or university and a solid academic record.

Prospective students must also have completed the following courses at the undergraduate level:

- Multivariable calculus
- One semester of statistics

**Computer Programming:** There is no formal requirement for a specific programming language. However, candidates are encouraged to demonstrate their skills with Python and R in their application to the Data Science Program.

Interested applicants who may lack specific requirements are encouraged to contact **Brian Wright**, Data Science Program director of operations, at [datasci@gwu.edu](mailto:datasci@gwu.edu) so he can provide individual advice on alternative ways to meet the requirements.

## International Applicants

International applicants are advised to apply before April 1st in order to obtain a visa in time to start their studies in the fall semester.

### Want to learn more?

For more information or to apply, visit [datasci.columbian.gwu.edu](http://datasci.columbian.gwu.edu) or email [datasci@gwu.edu](mailto:datasci@gwu.edu).

