Research Experiences for Undergraduates (REU) Site Summer 2026:
Online Interdisciplinary Big Data Analytics in Science and Engineering

Information and apply by 03/01/2026 at https://BigDataREU.umbc.edu/

This REU Site summer program provides an **8-week** research training to undergraduates on how to utilize modern data science and HPC techniques to process and analyze big data in many science and engineering areas such as Atmospheric Science, Mechanical Engineering, and Medicine. **This REU Site program will be conducted purely online to allow students to conduct research without traveling and work with experts nationwide.** In recent years, astronomical growth of available datasets in many science and engineering disciplines often requires big data analytics techniques to efficiently and effectively process the large datasets and gain knowledge from them. The program will help students identify research challenges when facing big data in science and engineering, and guide students to conduct research to tackle the research challenges using advanced cyberinfrastructure software technologies (big data, distributed machine/deep learning, HPC, etc.) and hardware resources (including big data cluster, CPU cluster, and GPU cluster). The program will provide development of the national workforce in areas of critical need on "Data + Computing + X". **Each participant who successfully finishes the program and completes all requirements will receive a $5,600 stipend and support to travel to a conference to present the research.**

We intend to host 8-10 undergraduate students in two multidisciplinary teams for 8 weeks **06/01/2026-07/24/2026**. Information and application link at https://BigDataREU.umbc.edu/.

Who should participate

- Students in computing related disciplines, such as Computer Science, Data Science, Mathematics, and Statistics, who want to know how advanced computing techniques in their own disciplines can help science and engineering.
- Students in science and engineering disciplines, such as Atmospheric Science, Mechanical Engineering, and Medicine, who want to know how advanced computing techniques can help their own disciplines.
- Students interested in interdisciplinary research and how big data and HPC techniques can be applied.
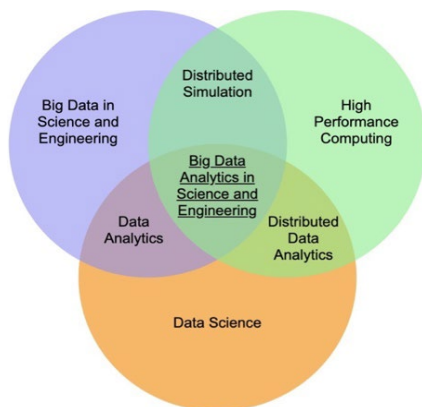
Online training structure
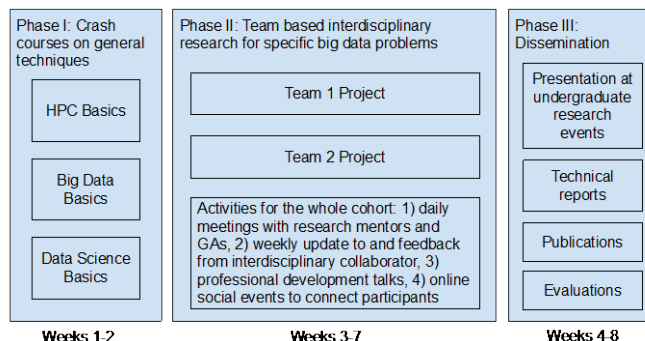
Prerequirites/Eligibility

1. Still be an undergraduate student at an accredited institution in the fall semester following the program
2. Completed at least 15 college credits prior to the start of the program
3. Completed a minimum of one course in programming, one course in calculus, and one course in statistics (soft requirement)
4. GPA of at least 3.0 on a scale of 4.0 (soft requirement)
5. Be a US citizen, national, or permanent resident (required)
6. Has access to a desktop/laptop computer with web camera
7. Be prepared to commit full-time to the program

Faculty mentors contact bigdatareu@umbc.edu

- Dr. Matthias Gobbert, Dept. of Mathematics and Statistics
- Dr. Jianwu Wang, Department of Information Systems

Apply for the Summer 2026 training (06/01/2026-07/24/2026)

There is no fee to apply to the training program. **Each participant who successfully finishes the program and completes all requirements will receive a $5,600 stipend.** We expect to have 8-10 participants in two multidisciplinary teams. Due to the capacity limit, there will be a selection process. To receive full consideration, please submit your application before **03/01/2026**.

The application package should include applicant's CV, personal statement, transcript, and at least two letters of recommendation. The personal statement needs to address specifically why the participant is interested in this program with its research areas and its team-based and online structure, the applicant's background in computing, programming, and related knowledge, how the participation will promote the applicant's career goals, and how they can contribute to a team of participants from multiple disciplines. See the webpage for more information on the program-specific requirements.