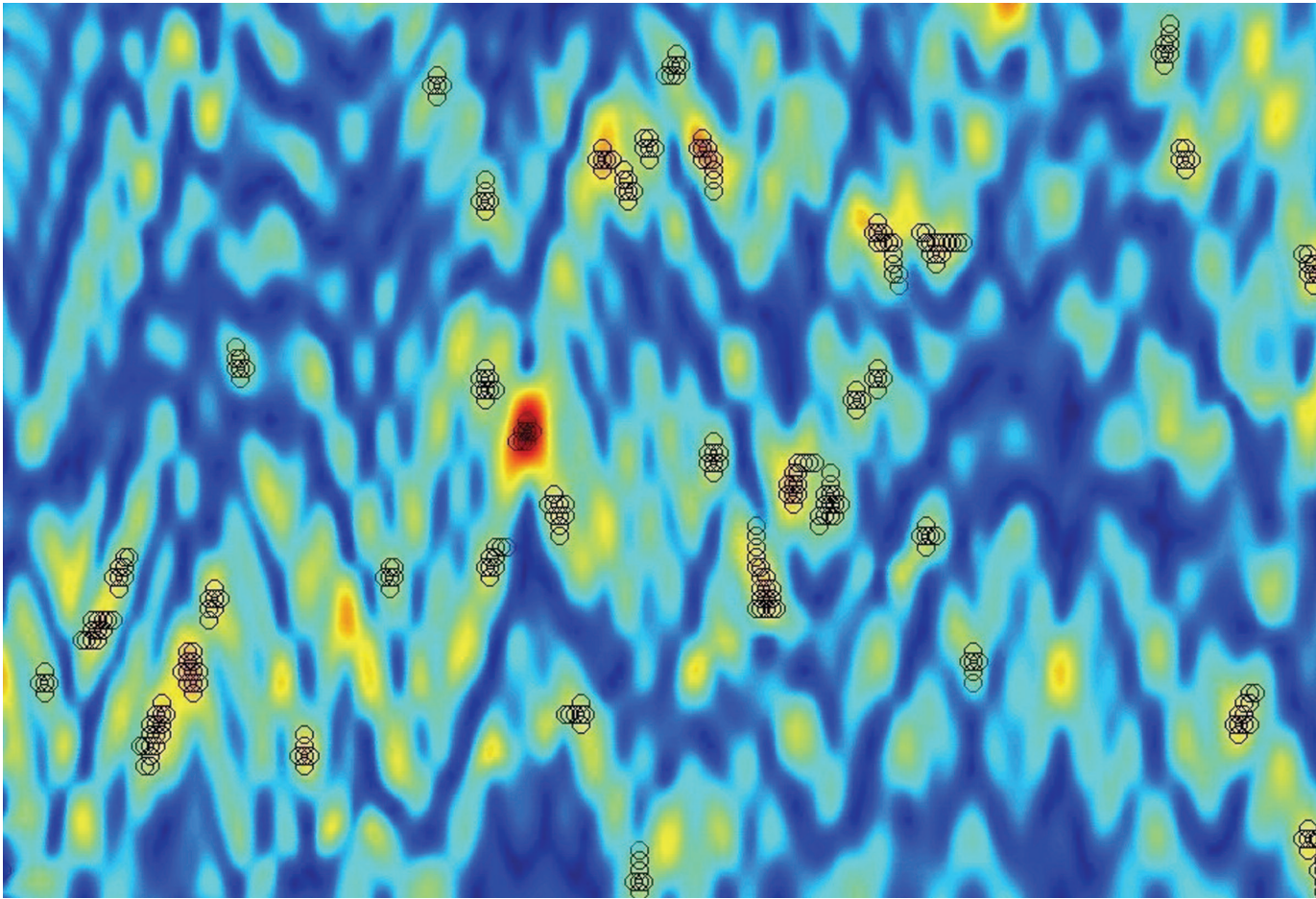


NJIT

New Jersey's Science &
Technology University

THE EDGE IN KNOWLEDGE

The Bachelor of Science in Computational Sciences



Department of Mathematical Sciences

College of Science and Liberal Arts

New Jersey Institute of Technology

WHY STUDY COMPUTATIONAL SCIENCES?

The Bachelor of Sciences in Computational Sciences is an interdisciplinary program that will enable students to explore the connection between science and computation, an area of great importance with the advent of powerful computing technologies, such as parallel supercomputers and high-performance algorithms such as the Fourier transform. Computational sciences combines the application of numerical methods, models, and algorithms in the context of solving problems that are intractable by traditional methods, thus providing new means for learning and advancing the traditional sciences.

Mathematics has always been crucial to many different forms of scientific inquiry. More recently, numerical simulation is combining with mathematical modeling to play a major role in science. Now, more than ever, advances in a wide variety of fields such as finance, software development, science and engineering benefit from the formulation and analysis of quantitative mathematical models and numerical computation. Successful analysis of a model leads to a better understanding of the system being studied and provides a predictive tool for system performance.

WHY STUDY APPLIED COMPUTATIONAL SCIENCES AT NJIT?

Active participation in the program by more than 40 NJIT mathematical sciences faculty members produces a stimulating learning environment. Many of the program faculty members have earned international reputations as a result of the breadth and depth of their accomplishments. The program offers students a unique opportunity to learn from leading experts in the field, and to participate with faculty in research sponsored by government agencies and industry.

WHAT DOES THE PROGRAM COVER?

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WHAT WILL I LEARN?

The undergraduate program in computational sciences emphasizes topics such as numerical computation, high-performance computing, scientific computing, and modeling and simulation. The program provides students with broad and flexible training and prepares them for careers in a wide variety of fields or for graduate study in science and computer engineering.

WHAT AREAS OF SPECIALIZATION ARE AVAILABLE?

- Computational Biology
- Computational Chemistry
- Computational Mathematics
- Computational Physics

WHAT KINDS OF RESEARCH DO COMPUTATIONAL SCIENTISTS PERFORM AT NJIT?

- In chemistry, computational simulation is helping researchers develop medication to treat cocaine addiction and modeling techniques to understand molecular processes in nanotechnology.

- Mathematicians are using realistic mathematical and computational models for research that ranges from blood circulation and how small vessels supply tissues with oxygen to ocean acoustics helping the Navy detect submarines.
- Biologists are applying modeling, simulation and statistical analysis to ecology, helping to protect endangered species, and to neuroscience, to map the structure and functions of the nervous system.
- In physics, solar researchers use computational techniques to forecast sunspots and related phenomena that may affect aviation and telecommunications.

WHAT EMPLOYMENT OPPORTUNITIES ARE AVAILABLE?

There is a strong demand for individuals who combine a background in chemistry, biology, physics or mathematics with expertise in computation in many industries, including pharmaceuticals, chemicals, and electronics; in government, especially the Department of Defense and NASA; and in education and research, including medical and environmental research.

IS FINANCIAL AID AVAILABLE?

The Office of Student Financial Aid Services helps to provide NJIT students with every opportunity to obtain funding to support their educational costs. The university encourages all students to apply for financial aid.

www.njit.edu/admissions/financialaid/

NJIT undergraduates can also offset educational costs by participating in the Cooperative Education Program, which provides a student with the opportunity to gain practical work experience in a professional environment. A co-op student works on a full-time or part-time basis for a company that has agreed to hire, train, and pay the student during a specific co-op work cycle. www.njit.edu/cds/students/co-op/index.php

FOR FURTHER INFORMATION

Professor Jonathan Luke
Office: 603 Cullimore Hall
Phone: 973-596-5836
joluke@m.njit.edu

TO APPLY:

Office of University Admissions
admissions.njit.edu
1-800-925-NJIT
Or apply on line:
www.njit.edu/admissions/undergraduate/applying/index.php