

DISCOVERY INFORMATICS



Katherine Gumps isn't shy about saying it: Discovery Informatics (DI) is the reason she came to the College of Charleston. She knew that data mining, analytics and machine learning would play an integral role in the research she intends to do. And, that expertise in DI will distinguish her as a researcher and as a job candidate.

Discovery informatics is a combination of statistics, mathematics, data base programming and machine learning. Each student who majors in DI chooses a cognate area out of options that range from accounting to e-commerce to exercise physiology and sociology.

For Katherine, DI was the perfect fit. "I knew I wanted to do some kind of biology work, because I loved the Mendelian genetics course I had before I came here," she explains. "The molecular biology cognate was an easy choice, and it led me to a number of unique opportunities to conduct research as an undergraduate."

Katherine's advisor put her in touch with a professor who was happy to involve her in DI-enhanced research. "She analyzes the muscles that insects use in flight. Surprisingly, she gave me a lot of freedom. I conducted certain tasks in the lab and speculated on what the results meant. Then, we would discuss all of it, she would give me some ideas, and I would go

back to the lab to try again. It was a wonderful, independent experience."

In this work, Katherine analyzed the occurrence of a specific protein in the insects' muscle tissue. To express her findings visually as part of the quantitative data analysis, she relied heavily on tools and techniques drawn from DI. In another research project, Katherine used discovery informatics in a presentation she made at a National Society for Neuroscience conference. She also won a prestigious scholarship with the National Institutes for Health, in Washington, D.C., which paid her to conduct lab work for 10 weeks over a summer.

"Having a background in DI enables me to do so much more in the research that I do. It gives me tools for analyzing, understanding and expressing information. I always want to know what the answer is, even though, technically, in science you never get the answers, you just get more questions. But that aspect of investigation is what keeps me motivated."

COLLEGE of CHARLESTON

Ours was the first undergraduate discovery informatics degree to be offered in the U.S. Our graduates are prepared for high-paying jobs and graduate programs, because the program teaches them how to use the tools and problem-solving skills of mathematics and computer science as a way to obtain information from large, multidimensional datasets, data streams and complex systems. Whether you plan to enter the workforce or pursue graduate degrees, this ground-breaking program will challenge you intellectually and prepare you to be a leader in the business of knowledge acquisition and knowledge management.

Facts

DI integrates math and computing.

You can choose from among 14 cognate disciplines from which to practice and learn.

DI graduates obtain high starting salaries and prestigious grad school offers.

Opportunities

DI majors enjoy a highly technical degree in a strong liberal arts and sciences setting.

Faculty researchers compete to lure DI majors into their labs.

Career opportunities are emerging in all areas of industry, government and business.

Through DI, students can develop multiple academic strengths, not just one.