

## Economics Major Explores Policy Through Quantitative Analysis by Naomi McMillen



For senior economics major Dylan Faust, conducting advanced quantitative analysis to uncover and forecast trends in wealth inequality in the United States was the perfect way to spend his last summer as an undergraduate at the University of Denver. Rather than take time off to enjoy Colorado's legendary summer weather, Faust was busy crunching numbers, interpreting numerical relationships and tirelessly working through advanced statistical equations.

The ability of economics and economic analysis to explain timely, policy-relevant issues is what originally drew Faust to the field.

"I'm interested in economics because it plays such a large part of life and the big things we as a society get to deal with," said Faust. "Issues of healthcare, law, finance, and the process of individual decision-making...economics and economic analysis can tell us a lot about how each of these work."

He especially enjoys the variability of the economics program at the University of Denver.

"It gives you the opportunity for a broad ranging perspective which some programs certainly don't provide. You can pursue a more heterodox sequence if you want, or you can take a more orthodox and quantitative bent if you so desire," he said.

This past summer and fall, Faust put his expert data analysis skills to good use as a research assistant for University of Denver economics Professor Markus Schneider. He assisted Schneider and a colleague in developing an alternative method for calculating overall inequality in the U.S. He employed the knowledge he gained from the faculty and coursework in the economics department at DU to statistically rid data of cyclical fluctuations to enable a more accurate interpretation of trends. His contribution will enable Schneider to better understand income inequality in the United States through a sound data-driven approach.

"Dylan is an exceptional student with a near 4.0 GPA," Schneider said. "He has shown incredible aptitude for quantitative work and after taking my 3000-level econometrics course asked to do an informal independent study on time series analysis. I gave him a book and he worked through chapters of it on his own over the summer while working!"

Faust explains that time series analysis, in general, is an econometric technique which helps glean statistical inferences from a time series set of data. The data typically consists of a set of observations of a particular occurrence over a particular span of time, such as yearly GDP over the past 100 years in Sweden. Time series analysis is a useful tool for uncovering historical trends in almost any kind of data.

In addition to making a valuable contribution to others' projects, Faust is embarking on his own independent research endeavor. For his senior project, he will examine the utility of Bayesian

statistical methods in game theory, specifically evolutionary and repeated games. Bayesian statistics is a branch of statistics which assigns a probability to a hypothesis. That hypothesis can then be re-evaluated in light of new information that becomes available.

Faust's senior research project will focus on how Bayesian statistical concepts apply to games of asymmetric information, or interactions in which actors come to the table with unequal knowledge about a situation or concept. His project will help explain the choices and decisions actors make in light of the information or knowledge they have at their disposal.

After graduation this June, Faust will attend a Master of Finance program at Washington University in St. Louis.

"I hope to work in the financial field in some capacity," he said. "As a dream job, I would eventually like to conduct global, or macro, level forecasting of economic indicators for a leading financial firm. Currency analysis is something else that I would find very interesting as a career."