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## Cassill Studies Fire Ants to Understand Human Behavior

By: [Alyson Seligman](#)

November 9, 2004 5:51 PM EST

More than 150 guests found out about research you don't hear about every day: how ants can be used to understand human behavior.

Specifically, Deby Cassill, PhD, animal behavior biologist, studies ants' individual behavior and the organizational structure of ant colonies to forecast human behavior and culture. At a recent colloquium, Cassill explained her unique research to a standing-room only crowd.

"I can do things with ants that you can't do with humans and primates – that's why I like studying them so much," Cassill, assistant professor for Environmental Science, Policy and Geography, said. "I have an entire universe in a little tray."

Cassill explained her new bioeconomic model – skew selection – which explains specific human behavior through research with fire ants. Cassill said that inequalities are at every level of biological organization. However, her skew selection model suggests that inequality leads to a greater societal good over time.

"If there was equality among all people that means there would not be a need to share love, needs, knowledge or anything else. This utopia would be a very lonely place because no one needs anything anymore," she said. "Therefore, inequality is really diversity."

Back in her lab, Cassill is surrounded by plastic boxes filled with small and large ant colonies that she studies along with her students. Using a microscopic video camera, she regularly videotapes ant behavior and has accumulated hundreds of video tapes that she can study.

Through extensive study, Cassill found that although a queen ant produces about three million offspring in her lifetime, she produces them unequally. Some are large fertile offspring, while others are small sterile offspring, known as the workers. Worker offspring stay at home to protect the queen and her fertile offspring until they are ready to fly off, mate and start their own family. Even among the small sterile offspring, inequalities are apparent. Some are cooperative workers while others are aggressive workers. Cassill suggests that the queen does this to protect herself – and it works. A queen fire ant can live up to 10 years because predators will pursue the weaker sterile offspring and not her.

"Humans do the same thing – we unequally invest in our children for the highest success. However, most humans do this on a subconscious level while the queen ant does this purposively."

For more information on fire ant research, please contact Cassill at [cassill@stpt.usf.edu](mailto:cassill@stpt.usf.edu).

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