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BLOOMINGTON, Ill.--Eleven Illinois Wesleyan University undergraduates will present research papers at the 20th annual meeting of the Association for Behavior Analysis in Atlanta, May 27-30.

"This is a professional conference with no special program or designation for undergraduates," explained James Dougan, assistant professor of psychology, who will lead the IWU delegation. "Our students will be presenting their work along with graduate students and professors. Very few undergraduates make presentations at conferences of this magnitude."

The 11 IWU students will present research findings on a half-dozen projects.

The conference, which will convene at the Atlanta Hilton, is expected to attract upwards of 1,500 psychologists, educators, occupational therapists, human resources officials from business and industry, and other disciples of the late B.F. Skinner, the pioneering behavioral psychologist. Dougan is one of 35-40 international members of the editorial board of the association's scientific publication, "Journal of the Experimental Analysis of Behavior."

The IWU students, Dougan said, will have the chance to hob nob with scientists from Europe, South America, New Zealand, Australia, and elsewhere--scientists whose work they have read and studied.

Emily Cointin, an IWU majoring in psychology from Beecher, Ill., attended the association's annual meeting last year and will be making her first scientific presentation at this year's conference.

"When I apply to graduate school," Cointin said, "it will be a big advantage" to have conducted research as an undergraduate and presented a paper at a national scientific conference.

Cointin explained, "I learned to understand research methods and deal with the problems that come up when you do research. I learned how to set up an experiment and schedule the work in order to get the most significant data."

Cointin, who is eyeing a doctoral program in child development, said, "Children are more interesting than adults, especially how much information they soak up in the first few years of life."

Dougan points out that former IWU students are in graduate school studying with professors from the University of California-San Diego, University of Florida, and elsewhere--scientists they met at previous meetings of the Association for Behavior Analysis.

From the teaching standpoint, Dougan sees big advantages for undergraduates who get involved in scientific research.

"When students read a textbook," he said, "they're reading a finished product. Here's what Freud found, for example. It doesn't give you the blood and guts of going through the process--for example, the going over to the lab to feed the animals so they won't die and set back the project, or the loosing of data when an apparatus fails, or the problems that come up when lightning fries your computer hard drive. Research immerses undergraduates in the blood and guts of the process--it's a wonderful experience."

Dougan points out that the IWU research projects slated for presentation at the association's annual meeting fall into three categories:

• The way response rates of rats vary in terms of learning and rewards over the course of a day. "Rats, just like people, have peaks and troughs during the day," Dougan explained. "Our research in this area is looking at why this happens--is it fatigue or are the rats satiated and not interested in responding because they aren't hungry?"

• Development of mathematical models of behavior. "In human terms," Dougan said, "if you're paid more, you work harder--but only up to a certain point. If you're rich, why work? For example, we see this with professional baseball players who sign multi-million dollar contracts and then their productivity goes down. Rats will do this, too. As you increase their 'pay' (food), they work harder and then taper off. In the laboratory, we're trying to measure with mathematical precision the variables that make this happen."

• Behavioral economics postulates that animals behave as people do in the marketplace, responding to supply and demand and bidding for rewards (food) based on the frequency and availability of the reward. For example, Dougan explained, if animals learn that food is readily available over a given period of time, they might not immediately eat it since supply seems assured. "In the real environment," Dougan said, "a pigeon on IWU's quad may be extra diligent looking for food since other birds also are looking for food. What we're looking at here is an economic model of competition among animals--a survival of the fittest model akin to Darwin's theory of evolution."