

OR366*Solenopsis invicta*: Chemical communication in mating flights and colony development**Robert Vander Meer**, Tappey Jones, Mon-Yeon Choi

Fire ant nuptial flights are characterized by frenzied activity by workers, and male and female alates that results in the opening of the normally closed nest tumulus, followed by male and female alates taking flight. Males fly first and form a population-wide horizontal lek at an altitude of 100 to 150 m. Females then fly into the male lek, mate, and fly to the ground. These are huge population-wide events with no evidence for localized use of prominent landmarks. Thus, semiochemicals are likely involved in the several defined mating flight events, e.g., flight initiation, male lek formation, female and/or male sex pheromones. During these mating flights the female alates mate only once, in spite of being in the vicinity of large numbers of males. We will discuss recent results that answer some of the questions surrounding semiochemical involvement in fire ant mating flights. In addition, we will address the role of semiochemicals in colony foundation and development.