

OR190*Global population structure and invasion history of Solenopsis geminata***Dietrich Gotzek**, Heather Axen, Sara Helms Cahan, DeWayne Shoemaker, Andrew Suarez

Biological invasions are largely thought to be contemporary, having recently increased sharply in the wake of globalization. However, human commerce already became global by the mid-16th century, when the Spanish connected the New World with Europe and Asia via their Manila galleon and West Indies trade routes. We use a large genetic dataset to infer the population structure and trace the global invasion of one of the world's most widespread and invasive pest ants, the Tropical Fire Ant, *Solenopsis geminata*. We show that Old World populations are introduced and their movement is highly consistent with historic trading patterns, suggesting that Spanish trade introduced the Tropical Fire Ant to Asia in the 16th century. We identify southwestern Mexico as the most likely source for the invasive populations, which is consistent with the early use of Acapulco as the major Spanish port on the Pacific Ocean. From there, the Spanish galleons shipped silver to Manila, which served as a hub for trade with China. The genetic data document a corresponding spread of *S. geminata* from Mexico via Manila to Taiwan and from there throughout the Indo-Pacific. Our descriptions of the worldwide spread of *S. geminata* represent the first documented case of a biological invasion of highly invasive and globally distributed pest species due to the earliest stages of global commerce. We hypothesize that many invasive ants reached their global distributions via early trade networks, when the use of soil as ballast was still common.