



Speaker:

Dr. Hojun Song

Professor, Department of Entomology,
Texas A&M University

Date: Monday, May 22, 2023

Time: 4:00 pm - 4:50 pm

Format: In-Person Seminar & Virtual Access

Location: Genomics Auditorium 1102A

Zoom: 938 1040 4405

Passcode: 833289

Title:

“Evolution of Locust Swarms and Phenotypic Plasticity in Grasshoppers”

Abstract:

The genus *Schistocerca* (Orthoptera: Acrididae) includes some of the most devastating locust species in the world, including the desert locust (*S. gregaria*), the Central American locust (*S. piceifrons*), and the South American locust (*S. cancellata*). These locust species show an extreme form of density-dependent phenotypic plasticity in which cryptic and shy individuals, known as the solitary phase, can transform into conspicuous and gregarious individuals, known as the gregarious phase, in response to changes in local population density. In fact, this “locust phase polyphenism” is what makes the locusts distinctly different from regular grasshoppers. Intriguingly, *Schistocerca* includes 45 species, most of which are non-swarming sedentary grasshopper species, and phylogenetic studies have shown that the locust species do not form a monophyletic group, suggesting that locust phase polyphenism has evolved multiple times in the genus. Furthermore, recent experimental studies have indicated that some of the non-swarming grasshopper species show reduced density-dependent phenotypic plasticity, suggesting that *Schistocerca* as a whole is an exciting model clade that can be used to study how phenotypic plasticity has evolved as species diverge. In this presentation, I will describe a research program that integrates phylogenetics, behavioral ecology, physiology, functional genetics, and comparative genomics to understand the evolution and mechanisms of phenotypic plasticity in *Schistocerca*, and highlight some of the latest findings.

Refreshments will be served in the Entomology Building Courtyard at 3:30pm