1145-91-898   **Jan Rychtar*** (`rychtar@uncg.edu`), **Shan Sun** and **Michael Leshowitz**. *The signalling game between plants and pollinators.*

Plants can send floral signals to advertise their reward for pollinators. Based on the presence or absents of such signals, pollinators can determine whether to visit plants. Plants can send dishonest signals but foraging behaviors of pollinators can limit such cheating. We model the plant-pollinator interactions by the two-type Spence signalling game and investigate the conditions under which honest signalling can be established. In our model, plants either send costly signal or they do not. The cost of signal is dependent on the quality of plant. Pollinators can learn from the interactions with plants and can update their willingness to visit plants' flowers to maximize their foraging efficiency. We find three general conditions that are required for the evolutionary stability of honest signaling. Those conditions are satisfied if there is (a) a high frequency of high-yield signalling plants in the population, (b) the balance between cost and benefit of signalling, and (c) high cost of dishonest signalling. Our model also predicts that other factors contributing to the establishment of honest signaling are the low abundance of pollinators, and the positive density-dependent and positive frequency-dependent relationship between plants and pollinators. (Received September 17, 2018)