

Eleanor Brush [mentors, Jessica Flack and David Krakauer]

The subject of this research is the development of power structures in animal societies. The degree to which combatants in a polyadic conflict defer to an intervener reflects their agreement about his power. Professors Jessica Flack and David Krakauer have developed a biological formalism capturing the degree of consensus about individuals, intervening ability in macaques. We would like to improve this formalism, and plan to focus on the mathematics of consensus rather than underlying biological principles. I hope to use tools including graph theory and information theory to develop other means of measuring this consensus, while building on the formalism already developed as well as other discussions of consensus in animal and human societies.