

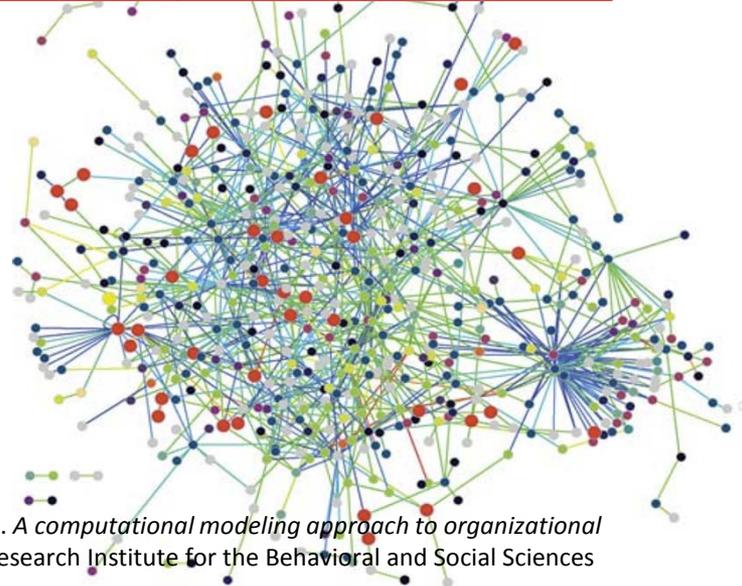
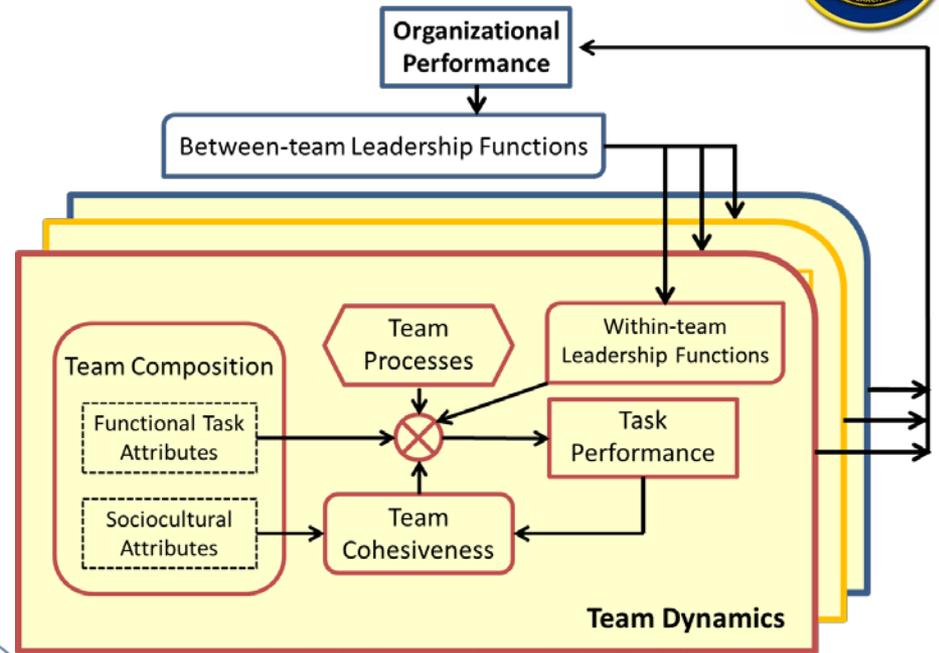
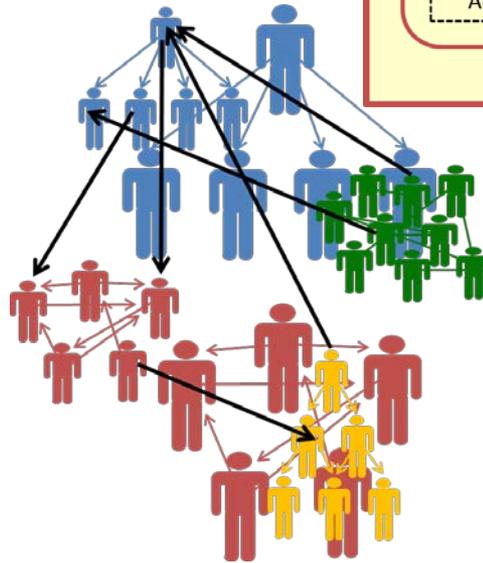
A Computational Modeling Approach to Organizational Effectiveness: Mapping the Effects of Leadership, Group Structure, and Environmental Shocks

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EXECUTIVE SUMMARY

This project consists of a three-year program of basic research designed to address gaps in theory on team and multiteam leadership, team composition, and adaptability to environmental shocks, with a specific emphasis on team and multiteam processes. Among the major problems in organizational research is the challenge of getting a wide range of variability on core constructs and the challenge of capturing the dynamics of core process mechanisms across multiple levels of analysis. The vast majority of organizational research is based on limited sampling strategies (i.e., single organizational samples) that constrain variance and static research designs (i.e., cross-sectional data) which fail to capture processes directly. We propose a novel research approach using computational modeling to conduct virtual simulations that will enable full exploration of a meaningful theoretical space relevant to the focal phenomena. This “virtual experimentation” will enable theoretical extension and the ability to identify and target for subsequent research, core mechanisms of team leadership and team dynamics. Phase 1 examines the influence of team leadership structures and team composition on team processes, such as team collaboration, and team outcomes such as cohesiveness and performance. Phase 2 examines multiteam leadership structures and multiteam composition on team and multiteam processes and outcomes. Phase 3 examines the responsiveness and adaptability of multiteam leadership structures and multiteam composition to varying environmental conditions as these systems perform. Implications of this research focus on advancing a dynamic, multi-level representation of multiteam systems that can be used to identify critical leverage points for personnel practices (e.g., selection, training, organizational design) and future empirical research aimed at improving organizational effectiveness.