

# Decision Processes Colloquia

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Monday, September 16, 2019

Where: 370 JMHH

When: 12:00 – 1:20 pm

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### Collective Problem-Solving of Groups Across Tasks of Varying Complexity

#### ABSTRACT:

As business and scientific organizations gravitate to group-based structures, the problem of improving performance through judicious selection of group members has preoccupied management scientists and managers alike. However, it remains poorly understood under what conditions groups outperform comparable individuals, which individual attributes best predict collective performance, or how task complexity mediates these relationships. Here we describe a novel two-phase experiment in which individuals were evaluated on a series of tasks of varying complexity; then randomly assigned to solve similar tasks either in groups of different compositions or as individuals. We describe two main sets of findings. First, while groups score higher than individuals across all complexity levels, they underperform a comparably sized “nominal group” of independent workers. Moreover, whereas both individuals and nominal groups are more efficient than groups when the task is simple, groups are more efficient for complex tasks. Second, we find that average skill level easily dominates all other factors combined, including social perceptiveness, skill diversity, and diversity of cognitive style, independent of task complexity. Our findings help to clarify inconsistencies in the existing literature and illustrate the utility of a “solution-oriented” approach to identifying principles of collective performance.

