

# Fluid Grouping: Quantifying Group Engagement around Interactive Tabletop Exhibits in the Wild

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## Summary

Interactive surfaces are increasingly common in museums and other informal learning environments where they are seen as a medium for promoting social engagement. However, despite their increasing prevalence, we know very little about factors that contribute to collaboration and learning around interactive surfaces. In this paper we present analyses of visitor engagement around several multi-touch tabletop science exhibits. Observations of 629 visitors were collected through two widely used techniques: video study and shadowing. We make four contributions:

- 1) we present an algorithm for identifying groups within a dynamic flow of visitors through an exhibit hall;
- 2) we present measures of group-level engagement along with methods for statistically analyzing these measures;
- 3) we assess the effect of observational techniques on visitors' engagement, demonstrating that consented video studies do not necessarily reflect visitor behavior in more naturalistic circumstances; and
- 4) we present an analysis showing that groups of two, groups with both children and adults, and groups that take turns spend longer at the exhibits and engage more with scientific concepts.

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