

Example of a structured abstract for submissions to *Human Factors*

(250 words maximum)

Objective: The performance costs associated with cell phone use while driving were assessed meta-analytically using standardized measures of effect size along five dimensions.

Background: Many studies have been conducted on the impact of cell phone use on driving showing some mixed findings. **Methods:** Twenty-three studies (contributing 47 analysis entries) met the appropriate conditions for the meta-analysis. The statistical results from each of these studies were converted into effect sizes and combined in the meta-analysis. **Results:** Overall, there were clear costs to driving performance when drivers are engaged in cell phone conversations. However, subsequent analyses indicated that these costs were borne primarily by reaction time tasks, with far smaller costs associated with tracking (lane keeping) performance. Hands-free and hand-held phones revealed similar patterns of results for both measures of performance. Conversation tasks tended to show greater costs than did information-processing tasks (e.g., word games). A similar pattern of results was found for passenger and remote (cell phone) conversations. Finally, there were some small differences between simulator and field studies, though both exhibited costs in performance for cell phone use. **Conclusion:** We suggest that (a) there are significant costs to driver reactions to external hazards or events associated with cell phone use; (b) hands-free cell phones do not eliminate or substantially reduce these costs; and (c) different research methodologies or performance measures may underestimate these costs. **Application:** Potential applications of this research include the assessment of performance costs attributable to different types of cell phones, cell phone conversations, experimental measures, or methodologies.