

72. Applying the Best Available Science to Fire Management: Individual and Organizational Influences to Success

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Fifty years of scientific literature on human behavior, communication and organizations offers numerous insights into the communication and use of science in the context of public land management. Using diverse but complementary social science theories and methods, I studied individual and organizational influences on the use of science by federal fire managers and decision-makers. Results supported the Technology Acceptance Model by showing individual beliefs about research usefulness to be better predictors of use than beliefs about ease of use. Overall, individual beliefs and attitudes toward research were diverse, with National Park Service managers, fire ecologists, and those with graduate education showing more positive attitudes toward research, more use of research and more frequent relationships with scientists. Applying the Diffusion of Innovation Theory, percentages of early and late adopters were different in different fire management positions; for example, fire ecologists showed the greatest percentage of early adopters. Organizationally, perceptions of learning culture and process varied by pay grade level; those at higher levels showed more positive views than those at lower levels. The following characteristics of learning organizations showed the most room for improvement in the fire management community: time for reflection, appreciation of differences and analysis of assumptions. Finally, structural equation modeling was used to compare the relative influence of individual beliefs and attitudes and organizational culture on research use. Based on this study's results, I conclude with recommendations to scientists, science communicators and upper level land managers interested in bridging the gap between science and decision-making by public fire managers.

A fire social science analyst, **Vita Wright** works in a shared position between the USFS Human Factors & Risk Management RD&A and the NPS Branch of Wildland Fire. She is also studying individual and organizational influences on the use of fire science as a University of Montana PhD Candidate. Previously, Vita developed and led the interagency Aldo Leopold Wilderness Research Institute's Research Application Program, which focused on wilderness science application. She now focuses on organizational culture and organizational learning in support of fire communication and decision-making, safety and the integration of science with management.