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**Understanding Risk Perceptions and Public Information Needs from the
Bottom-Up: Important Elements for Managing Responses to Hazardous NEO's**

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ABSTRACT

As the NEO community concentrates on evaluation of scientific, technical and infrastructure needs in anticipation of hazardous NEO's, it is advisable to focus on communications and information needs as well. While communication among expert groups will presumably be addressed during ongoing technical deliberations and planning, the public risk communication needs will require special attention, in part because the features of NEO threats are so unusual in many ways. Because of the public's limited, and perhaps inaccurate information about asteroid threats, there is a special need for focused research to better understand the risk perceptions and communication needs of diverse non-expert groups.

Risk communication about NEO's is complicated by multiple factors. For example, there is scant public awareness of the reality of these low probability but potentially devastating events, and complete unfamiliarity with possible precautionary plans or actions in the face of the large-scale or potentially global nature of the threat. In addition, there is likely to be an unusually long time frame between pre-impact monitoring and complex decision-making about deflection. The time lags will be probably be combined with uncertainty about impact warnings as well as a lack of information about post-impact recovery plans. In combination, these factors will represent unusual challenges in attempts to plan useful communication strategies. Communication could be further complicated by scientific vs. supernatural or apocalyptic interpretations of NEOs, differences in cultural and political views, and questions about *who* should be in charge of taking proactive steps for protecting lives and minimizing collective losses in different parts of the globe. Thus, NEOs represent interesting case studies for analyzing unusual aspects of hazard and risk

communication —from basic education about the hazard and its unfamiliar risks, to what information will be needed at various times, to considerations of how personal and group risk perceptions should be incorporated into risk messages for various situations.

As seen repeatedly in large-scale disasters (e.g., hurricanes, earthquakes, tsunamis, etc.), broad communication and community-level awareness and preparedness are essential for minimizing loss of life and infrastructure damage, and for facilitating orderly compliance with public instructions and recommendations. Considering a bottom-up view of risk perceptions and information needs is essential for planning effective communications strategies for NEO threats. We know the questions and concerns are likely to go well beyond the simple communication of scientific and technological details or evacuation plans.

This presentation dissects planning and response preparedness for NEO threats, and identifies particular public communication needs that will require special research and attention. It is advisable to begin now to develop plans for public communication based on the well-established foundations of research about risk perception, crisis management and natural hazards to ensure that the full spectrum of communications needs is addressed at the same time that the technical infrastructure is being developed. Waiting until a later stage before addressing public communication needs may be too late, particularly if the public questions technological 'solutions' or mistrusts the decision makers and experts. Now is the time to pro-actively gather accurate research information about the public's understanding and risk perceptions on asteroid threats; to borrow from literature and experiences related to diverse natural hazards and different cultural groups; and to develop and run simulation experiments and exercises in order to better understand the public's knowledge and likely responses to the unusual aspects of asteroid threats and intervention actions