



## Stanford eCorner

### Risk Analysis Examines Uncertainties

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Video URL: <http://ecorner.stanford.edu/videos/2377/Risk-Analysis-Examines-Uncertainties>

In a world of uncertainties, you seldom have statistics, explains Dr. M. Elisabeth Paté-Cornell, department chair of Management Science and Engineering at Stanford University. Risk analysis examines a broad distribution of outcomes based on scenarios and their probable consequences. From these results, she says a people must decide if they can live with the hypothesized outcomes. If not, we must decide how to best allocate resources for reinforcement of the systems in place to avoid disaster.



#### Transcript

So now, here is the problem: in a world of uncertainties you very seldom have statistics. And that is where you have to think straight. And when you do a risk assessment, you have to look at scenarios, what is it that you are going to face or that you can face, the probabilities and the consequences. Let me say that risk is not an expected value. It's not the probability multiplied by the consequences because very often, you have rare events with very high consequences. So what you need is a distribution on these outcomes. OK, then you can use the results to do several things. One is to track that you can live with the results. And if not, how you are going to allocate the resources that you are going to dedicate to the reinforcement of that system. And I'm going to show you that there are many ways of doing that.