Ann Bostrom
Current research interests:

My research focuses on mental models of hazardous processes and more generally on risk perception, communication and decisions - both personal and policy decisions. Measuring mental models, and learning more about the relationship between mental models and subjective quantitative estimates, such as probabilities, interest me in particular.

How hazards and exposures unfold in time and space strongly determines the nature of the risks people face, but not necessarily their perceptions thereof – or at least not the same way. A salient example is air quality, which varies between indoors and outdoors, and in general with proximity to sources. With EMF risk perceptions it was evident that line of sight was used by lay people to determine exposure: if you could see a transmission line, you were exposed. Right now I'm involved in several research projects (see below), all of which have interesting geospatial dimensions that are likely to play out in perceptions. I'm particularly interested in the relationships between environmental data collection and representation techniques using personal devices, risk modeling, risk perceptions, and risk reduction communications, decisions, and actions. How do the spatial attributes of perceived risks from faults (i.e., mental maps of earthquake hazards), which people don't see, compare to those of risks from air pollution, which people can see at least some of the time? How the properties of spatial representations of risks influence risk perceptions and can be used more effectively in risk communications also interests me.

Current projects:

Mid-America Earthquake (MAE) Center, Consequence Minimization thrust, Probabilistic Decision Support. The PI for this project to develop earthquake mitigation decision support is Barry Goodno (Civil & Environmental Engineering); Georgia Tech is one of multiple universities in the Center, headed by Dan Abrams at UIUC and funded by the National Science Foundation): Jim Craig (Aerospace Engineering) and I are collaborating on this project - which is one of several MAE Center projects at Georgia Tech - with doctoral students Joonam Park, Leonardo Duenas, and Steve Burns. Doctoral students Mohan Turaga and Branco Ponomariov have also contributed to this effort, through their work examining what we know about earthquake mitigation decision making and the notion of 'acceptable consequences' of earthquakes.

PERCH (Partnership for Environmental Research and Community Health) Air Quality Study (PI Michael Chang, EAS, funded by the U.S. EPA): with public policy doctoral student Mohan Turaga. We are studying risk screening models for toxics and criteria air pollutants in Escambia and Santa Rosa Counties, and looking at a range of ways of comparing these risks.

Family Decision Making and the Value of Preventing Childhood Developmental Impairment. This project is about to be funded by the U.S. EPA under the joint NSF-EPA Decision Making and Valuation for Environmental Policy program. PIs Alan Krupnick, Sandra Hoffmann at Resources for the Future are working with Wiktor Adamowicz of the University of Alberta and me to improve contingent valuation survey design, in this pilot study for the assessment of how parents value mitigating potential risks to their children from household lead paint. Mental models interviews of parents on lead and on their family decision making are a central part of this project.

Probabilities, risk judgments, and the effects of the Community Risk Scale: Together with Norman Brown at the University of Alberta, and Bob Chen and Beth Hibbs at the Centers for Disease Control and Prevention, we've tested the effects of a risk comparison framework, the Community Risk Scale, on people's subjective judgments of the relative and absolute frequencies of some causes of death, including vaccine-preventable diseases. The first part of this was funded by a Biotech-CDC seed grant. Public Policy undergrad Emily Atkinson has worked me on a replication and extension of this project, in which we have collected a small set of mental models interviews on smallpox vaccine and disease, and will also be studying subjective estimates of risk - both feelings of riskiness and probabilities of adverse events.

Undergraduate Farhan Akthar collected interviews under the guidance of Michael Chang and me to study the Atlanta Ozone Health Advisory and the degree to which there is consensus among its authors on its contents and related risk perceptions and judgments.