Competing images of scientific inquiry both within and between grade levels, across subject domains, and between school and out-of-school contexts can be damaging if it produces too much divergence about the goals of science teaching and learning. The *National Science Education Standards* have designated science inquiry as one of the core content strands. Two goals exist for the science inquiry strand:

1) Learning to do science inquiry and
2) Developing an understanding of the nature of scientific inquiry.

Varied and disparate interpretations of what it means to do science inquiry and what it means to understand the nature of scientific inquiry could, over the course of a K-12 science education and/or through concomitant out-of-school experiences, lead to confusion and distrust in science as a way of knowing.

We are proposing an inquiry synthesis conference to promote a scholarly dialogue about the nature of scientific inquiry for the purpose of establishing a new interdisciplinary research agenda on science learning and reasoning goals for K-20 educational programs. Such a synthesis conference among social science and science studies scholars can bring new and innovative frameworks and perspectives to out-of-school and school educational research and to teacher professional development. In turn, the conference proceedings can inform and address the model formulation processes that inform policy about the design of science curriculum, instruction and assessment practices. Specifically, the conference agenda will develop a framework of scientific inquiry that can impact the design of science curriculum, instruction and assessment models both across subject domains and age/grade levels.

The proposal seeks to bring together for a 3 day conference scholars from 3 academic communities: 1) the learning sciences; 2) science studies; 3) educational research. The structure of the conference has two parts. The sessions on the first day of the conference will be devoted to discussion of issues about the nature of scientific inquiry and inquiry models of learning. The sessions on the second day will continue the focus on inquiry models but also begin to ask questions and raise issues about aligning models of scientific inquiry into curriculum, instruction and assessment models.

There will be 8 paper sessions with representation from each of the 3 scholarly communities: learning sciences, science studies, and educational research. There will be two summary panel groups composed of educational researchers. The entire proceedings of the conference (e.g., presentations, comments, and discussions) will be published as an edited volume and made available as a CD. Symposium session presentations on the outcome of the conference will be submitted to American Educational Research Association, National Association for Research in Science Teaching, and the History of Science Society. In addition, the recommendations and issues emerging from this conference will inform the framework and content for the 'Critical Issues Conference' of the 2005 International History and Philosophy of Science and Science Teaching, Leeds, England.