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Introduction: Towards a Research Agenda for Science Communication Ethics

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Introduction: Towards a Research Agenda for Science Communication Ethics

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As science continues to become implicated in personal and collective decision-making, the stakes for communicating science to non-expert audiences intensify. In such an environment, a clear articulation of ethical issues arising from science communication is essential. If the audience's normative expectations are not understood, even the best-intentioned science communicator find herself exacerbating existing controversies over decisions with additional unproductive controversies over appropriate communication.

Unfortunately, this needed articulation does not yet exist. The purpose of the Third Iowa State Summer Symposium on Science Communication was to bring together scholars from across disciplines whose research can supply a theoretical articulation of the ethical issues surrounding the communication of science to non-expert audiences. Participants contributed both humanistic and social scientific approaches to the issues, drawing from disciplines including science communication, rhetoric, philosophy, and science and technology studies.

As originally envisioned in the call for proposals, we looked for work on the following known issues:

The underlying goals of science communication. A growing array of resources explains to scientists *how* to communicate. This important work needs to be supplemented by investigations of another vital topic: *Why* communicate? Are scientists or professional science communicators responsible for promoting the public image of science? For increasing scientific knowledge among lay audiences? For promoting the sound use of scientific information in policy-making? Each goal will lead communication efforts in a different direction, and not all may be compatible.

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Specific ethical issues within science communication, such as hype, spin, and advocacy. These and related terms are used by scientists themselves in evaluating communicative conduct. On what basis can we distinguish potentially inappropriate advocacy from appropriate participation in the political process? When does obligatory self-promotion of scientific work become illegitimate hype? Answers to these and related questions could provide immediate benefits

Ethical standards for the use of non-rational appeals such as narrative, framing, and metaphor. Communication research has identified many techniques for increasing the effectiveness of science communication. Under what conditions is it legitimate to use these techniques—or when do they become manipulative?

Normative roles of scientists, citizens, science journalists, science bloggers and other stakeholders within the science communication process. The decline of the traditional media has been accompanied by the flowering of new channels for communication between scientists and publics. But while journalistic ethics has been a long-cultivated subject, the normative requirements of these new roles have been little examined. What are the responsibilities of a science blogger to her colleagues and her readers? Should a science communication specialist attached to a university center consider her job to involve more than just PR?

Ethical challenges in communicating subjects such as risks, uncertainties, and scale. Clarity about such matters is vital to promote good personal and collective decision-making. But communication is complicated by the fact that scientists and lay audiences hold different conceptions of these topics. What does it mean to communicate science accurately given these gaps?

Normative issues in the design of public participation processes. For over a decade, almost all the interdisciplinary scholarship on science communication has insisted that the linear, deficit model needs to be replaced by an alternative model stressing bilateral conversation between scientists and citizens. But public engagement/public participation presents its own ethical challenges. What are the ethical norms governing conduct within public participation exercises? And just as important, what are the responsibilities of the academics who design and run them?

Empirical work on the perceptions of ethical issues from the perspectives of various stakeholders. Skilled science communicators are already encountering normative issues in their everyday practice. Research that recovers and categorizes their otherwise only partially articulate ethical conceptions can provide a valuable basis for theoretical work on science communication ethics.

*Approaches to teaching science communication ethic*s. With strong federal support, the last few years have seen a dramatic expansion of teaching and training opportunities focused on research ethics and science communication practice. How can the overlap area—science communication ethics—fit in to this new agenda?

The wide-ranging and fruitful conversations at the Symposium sharpened some of these issues and opened new ones. Based on written comments from groups of participants and discussion at the closing session, the following topics and issues represent additions to the emerging research agenda for science communication ethics:

Tensions. A central tension emerged in many papers between science communication that is effective/persuasive/strategic/sensational and that which promotes good deliberations, respects the autonomy of addressees, fosters the common good, and is accurate to the science.

How can this tension be managed—by specific communicators, with specific audiences, on specific public issues?

"Modes." There are a variety of "modes," or roles, or communication activities involved in science communication: transmission of information, of course, but also deliberation, advocacy, science advice, science education in informal settings, reflection and hybrid fora, among others. Each is likely to have its own normative framework in need of articulation.

"Meta." Understanding science as a situated set of institutions and practices encourages attention to the ways social actors orient to the practice and to each other. The practice of science and science-based decision-making must gain reflexivity, building ethics and social responsibility in "upstream" through public participation exercises. Equally, lay audiences must gain "critical science literacy" or "meta-expertise," being able to sort out who is trustworthy and what is reliable. And the ways in which communication scholars can appropriately support these need to be explored.

Frameworks. The nascent study of science communication ethics would do well to draw from related scholarly projects, including theories of social justice, feminist philosophy of science, social epistemology and conceptions of practical rationality drawn from American pragmatism.

Concepts. Where the call for proposals had invited work on scientists' conceptions of science communication ethics, the Symposium made clear that conceptions within the scholarly community also need attention. How can we talk in non-vague ways about *values*—and especially, about the integration of values with multiple conceptions of knowledge and expertise? What is *manipulation*? *accuracy*? *ethos*? *consensus*? *explanation*?

This research agenda for science communication is rich, compelling, and timely. The issues clearly require the assistance of a variety of disciplines in order to move forward. We thank the participants at the Third Iowa State University Summer Symposium for their contributions, and we look forward to future conversations.