



Online Ethics Center  
FOR ENGINEERING AND SCIENCE

# The Contrary Research Environment: What is RCR Instruction Up Against?

## Description

In this presentation Melissa Anderson discusses how RCR training may actually affect behavior.

## Abstract

**Speaker:** Melissa S. Anderson

Presented at the workshop on *Ethics Education and Science and Engineering Research: What's Been Learned? What Should Be Done?* that took place at The National Academies Keck Building in Washington DC, on August 25-26.

Presentation Summary

([Download the full presentation from the CEES website](#))

This presentation provides empirical evidence of the relative power of RCR instruction (formal and informal) and characteristics of the research environment to affect scientists' research behavior. It then advocates a more collaborative role for scientists and RCR educators, with behavioral change as its goal.

RCR instruction, in all its forms, is arguably the best hope for promoting research integrity. The catch, however, is that scientists' decisions and behavior are strongly influenced by their immediate research environments. For example, most scientists see their fields as highly competitive, and they tend to attribute bad behavior to competitive pressures. They have a sense of traditional scientific norms, but they

see their colleagues violating those norms on a regular basis. Many scientists see high levels of questionable research behavior among colleagues in their own departments. Many view the peer-review system as rigged in favor of certain senior scientists, and their sense of injustice affects their views of what people have to do to get ahead in science.

In this tough, contrary environment, RCR instruction wields a soft sword. It is up against patterns of behavior, enacted norms and perceptions of science that are reinforced in day-to-day decisions in laboratories and other research sites. When tested by the criterion of actual, subsequent misbehavior, training proves to be far less powerful than these environmental forces. RCR training needs to become a more integrated, organic part of scientific research -- in effect, a competing, compelling force in the research environment. It needs to move into the laboratory and other research sites, as a shared responsibility of scientists and RCR educators. To affect behavior, it needs to be a prominent and persistent presence in research settings. It requires a different role for RCR educators.

The criterion of behavioral change is both simpler and tougher than typical RCR assessment criteria. RCR educators need to collaborate with working scientists to address behavior in labs that compromises integrity, such as cutting corners. They need to provide ideas and resources to be used in actual research settings to call attention to ethical aspects of ordinary research. They need to provide better communication and exchange of ideas among laboratories about best practices for promoting research integrity. In short, they need a more active role and presence in research settings, in collaboration with scientists, to have a significant effect on research behavior.

The presentation is based on data from focus groups, a national survey, and interviews with scientists involved in international collaborations.

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