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Preparing Material Science Researchers for Tomorrow's Ethical Scientific Challenges

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Responsible Conduct of Research (RCR) courses are opportunities to prepare MRSEC scientists for tomorrow's ethical scientific challenges. This year, the MRSEC Education team implemented a revised RCR curriculum for the entire Division of Science that was previously shown to be more effective than lectures and small-group discussion. Over 1.5 days, 30 faculty, 79 graduate students, and 27 postdocs participated in an education experiment designed to better engage participants during instruction and improve their ethical-decision making abilities. Before class, participants read an online textbook and took short auto-graded reading quizzes. In class, they worked in small interdisciplinary groups and discussed seven ethics topics, each with its own case study. MRSEC staff facilitated the full-class discussions using interactive technology. Integrated among learners, the faculty were able to assess participants' understanding of the content in real time and appropriately address misconceptions. Feedback from both faculty and participants was very positive. A formal assessment will be done next year so that other MRSECs could adopt this model.



Working in small teams, MRSEC postdocs and graduate students discuss solutions to case studies.



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