**RET Workshop-Ethics in Research** (Speaker: Dr. Anant Kukreti, Director for Engineering Outreach, UC CEAS; July 6, 2015 1:00pm–2:30pm

This session was presented by Dr. Anant Kukreti.

Dr. Kukreti began by explaining the simple rules to research ethics; don’t fudge your data, don’t mislead people, don’t take money to get the “right” answer and don’t try to profit from your research. Rules governing the ethics of research have been developed because of past abuses. Researchers are liable for legal action financially and can be debarred running their professional career for not adhering to ethical standards.

The two biggest areas are misconduct and unethical behavior. Misconduct is falsifying data, results and conflict of interest with the intent to deceive. Unethical behavior is some violation of usual norms of fairness yet still needs to be reported. A good resource to help adhere to ethical guidelines is <http://www.niehs.nih.gov/research/resource/bioethics/whatis.cfm>.

Dr. Kukreti reviewed the main principles of honesty, objectivity, integrity, carefulness, openness, respect intellectual property, confidentiality, responsible publication, respect for colleagues and responsible mentoring, social responsibility, competence, nondiscrimination and legality, and human subject and animal care/protection. Dr. Kukreti stressed that communication is essential when doing research, that one must report anything that is a potential conflict with data, bias, relationships with other researchers. A researcher always needs to specify limitation and report anything even if it is beyond the researcher's control. If a project is funded the funding source needs to be informed of changes that might affect outcomes and the circumstances behind the changes. Any conflict of interest need to be announced before research or review of research begins. The burden is on the researcher to adhere to accuracy of data and openness in reporting. Research needs to be that researchers and not the work of another. When using human or animal subjects no harm can be a result of the research.

Dr. Kukreti closed with a review of the gray areas. Advice was given to always disclose anything that could be a conflict, keep good records, chose fair solutions and to review the rules. He reiterated that research ethics are largely common sense and disclosure is key.

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| **Figure 1: Dr. Kukreti Introducing Research Ethics** | **Figure 2: Students Following Along on the PowerPoint** |