

Values and Virtues

Adventurous
Altruistic
Ambitious
Assertive
Balanced
Being a good listener
Beneficence
Caring
Cheerful
Compassionate
Confident
Courageous
Creative
Dependable
Discerning
Discretion
Empathic
Enthusiastic
Flexible
Focused
Fortitude
Friendly
Generous
Honest
Humility
Idealism
Imaginative
Impartial
Industrious
Integrity
Intelligence
Intuition
Joyful
Justice
Kindness
Knowledge

Leadership ability
Level-headed
Loyalty
Mercy
Non-maleficence
Objective
Organized
Patient
Perseverance
Prudent
Resilient
Respect for Diversity
Respect for Others
Self-awareness
Self-discipline
Self-esteem
Sense of Humor
Sense of Spirituality
Sensuality
Serenity
Sharing
Simplicity
Sincerity
Spontaneity
Tactful
Teamwork
Temperance
Thoughtful
Tolerant
Trustworthy
Truthful
Understanding
Uniqueness
Value Neutrality
Welcoming
Wisdom

Sticky Situations 1*

- Ed, a fourth-year graduate student, was still several months away from finishing an ongoing research project when a new postdoc arrived from a laboratory doing similar work. After the two were introduced, Ed automatically asked about the work going on in the other lab and was surprised to hear that researchers there had successfully developed a reagent that he was still struggling to perfect. Knowing that both labs had policies requiring the sharing of research materials, Ed wrote a letter to the head of the other lab asking if the laboratory could share some of the reagent with him. He didn't expect there to be a problem, because his project was not in competition with the work of the other lab, but a couple of weeks later he got a letter from the lab director saying that the reagent could not be shared because it was still "poorly developed and characterized." The new postdoc, upon hearing the story, said, "That's ridiculous. They just don't want to give you a break."
 - Where can Ed go for help in obtaining the materials?
 - Are there risks in involving other people in this situation?
 - What kinds of information is it appropriate for researchers to share with their colleagues when they change laboratories?
 - What different values are in play here?
- Fatima, a senior undergraduate student, had been working on a research project that involved an important new experimental technique. For a national meeting in her discipline, Fatima wrote an abstract and gave a brief presentation that mentioned the new technique. After his presentation, she was surprised and pleased when Dr. Freeman, a leading researcher from another university, engaged her in an extended conversation. Dr. Freeman asked Fatima extensively about the new technique, and Fatima described it fully. Fatima's own faculty advisor often encouraged her students not to keep secrets from other researchers, and Fatima was flattered that Dr. Freeman would be so interested in her work. Six months later Fatima was leafing through a journal when he noticed an article by Dr. Freeman. The article described an experiment that clearly depended on the technique that Fatima had developed. She didn't mind; in fact, she was again somewhat flattered that her technique had so strongly influenced Dr. Freeman's work. But when she turned to the citations, expecting to see a reference to her abstract or presentation, her name was nowhere to be found.
 - Does Fatima have any way of receiving credit for her work?
 - Should she contact Dr. Freeman or as her advisor to do so in an effort to have her work recognized?
 - Is Fatima's faculty advisor mistaken in encouraging her students to be so open about their work?
 - What different values are in play here?

* Scenarios adapted from National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. 2009. *On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/12192>.

Sticky Situations 2[†]

- Rowan was just months away from finishing their senior thesis when they realized that something was seriously amiss with the work of a fellow undergraduate student, Sylvia. Rowan was convinced that Sylvia was not actually making the measurements she claimed to be making. They shared the same lab, but Sylvia rarely seemed to be there. Sometimes Rowan saw research materials thrown away unopened. The results Sylvia was turning in to their common thesis advisor seemed too clean to be real. Rowan knew that they would soon need to ask their thesis advisor for a letter of recommendation for graduate school and for a fellowship they were applying for. If they raised the issue with their advisor now, they were sure that it would affect the letter of recommendation. Sylvia was a favorite of her advisor, who had often helped Sylvia before when her project ran into problems. Yet Rowan also knew that if they waited to raise the issue the question would inevitably arise as to when they first suspected problems. Both Rowan and their thesis advisor were using Sylvia's results in their own research. If Sylvia's results were inaccurate, they both needed to know as soon as possible.
 - Should Rowan first try to talk with Sylvia, with their thesis advisor, or with someone else entirely?
 - Do they know enough to be able to raise concerns?
 - Where else can Rowan go for information that could help them decide what to do?
 - What different values are in play here?
- Marisol, a first-year graduate student, is participating in a department-wide seminar where students, postdocs, and faculty members discuss work in progress. An assistant professor prefaces her comments by saying that the work she is about to discuss is sponsored by both a federal grant and a biotechnology firm for which she consults. In the course of the talk Marisol realizes that she has been working on a technique that could make a major contribution to the work being discussed. But her faculty advisor consults for a different, and competing, biotechnology firm.
 - How should Marisol participate in this seminar?
 - What, if anything, should she say to his advisor-and when?
 - What implications does this case raise for the traditional openness and sharing of data, materials, and findings that have characterized modern science?
 - What different values are in play here?

Additional Resources

- Ethical Dilemmas in Scientific Research and Professional Integrity: <https://georgiactsa.org/research/regulatory-knowledge-support/ethics-center.html>
- A Framework for Ethical Decision Making: <https://www.scu.edu/ethics/ethics-resources/a-framework-for-ethical-decision-making/>
- Cautionary tales: ethics and case studies in science: J Microbiol Biol Educ. 2014 Dec 15;15(2):208-12. doi: 10.1128/jmbe.v15i2.761.
- An Online Research Ethics Course: https://ori.hhs.gov/education/products/montana_round1/research_ethics.html

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