

- 1) Read: Educate yourself about the history of your science. Work hard to ground yourself in the historical and current context of your scientific question(s).
- 2) Your sense of reason is actually your greatest scientific tool, far more useful than any other instrument in your laboratory. Use it.
- 3) Adopt an issues-directed, rather than a method-directed approach to science. If the fastest way to make progress is to apply a new method, don't be cowed by your methodological ignorance. Learn it, or find a collaborator to help.
- 4) Develop an organized plan for your own personal training and development. There is a lot for you to know and understand, and multiple methodologies that you must master, if you are going to operate in science at the highest level. It is crucial that you systematically prepare yourself for your future great good works.
- 5) Work on the creation of a logical superstructure that extends widely across your scientific arena. Don't forget to water and fertilize your logical garden. Measure progress by how far, how fast, and how securely you can advance that logical frame.
- 6) Take the carefully collected data of other scientists seriously. Work to sharpen your ability to distinguish between their observations, and their arguments. Respect the former; the latter are just arguments. Remember that carefully collected data (yours or others') that do not fit your logical frame can be more valuable than data that do.
- 7) Most modern science is team science. Work on the development of your leadership and mentorship abilities, because they will critically enable – or limit – your 'personal' achievements.
- 8) Actively seek extensions of your science out into the 'real world'. If you discover one, see that you (or someone else with the requisite ability and energy) exploit(s) it.
- 9) Science is not just a career. It is an honored profession. Your value as a scientist is not measured by job security or external acclaim. What counts: Studies that make a difference. Studies that advance our understanding. Studies that last.
- 10) Be a good citizen-scientist. Accept your responsibility for playing an active role in educating the wider public about the importance and societal value of real science.