

1. Finding the significance of a problem is hard, even for experienced researchers. Too many researchers at all levels write as if their only task is to answer a question that interests them alone.
2. Solving a practical problem usually requires that we first solve a research problem, but it's crucial to distinguish practical research problems from conceptual ones: ... A practical problem is caused by some condition in the world (from spam to losing money in Omaha to terrorism) that makes us unhappy because it costs us time, respect, security, pain, even our lives We solve a conceptual problem not by doing something to change the world but by answering a question that helps us understand it better.
3. There is a second reason inexperienced researchers sometimes struggle with this notion of a research problem. Experienced researchers often talk about their work in shorthand.
4. To avoid that judgment, you need a research problem that focuses you on finding just those data that will help you solve it.
5. A flat tire is a typical practical problem, because it is (1) a condition in the world (the fact) that imposes (2) a tangible cost that you don't want to pay, like missing a dinner date.
6. Those outside an academic field often think that its specialists ask ridiculously trivial questions: How did hopscotch originate? But they fail to realize that researchers want to answer a question like that so that they can answer a second, more important one.
7. We call research pure when the solution to a problem does not bear on any practical situation in the world, but only improves the understanding of a community of researchers. When the solution to a research problem does have practical consequences, we call the research applied.
8. They believe that the pursuit of knowledge "for its own sake" reflects humanity's highest calling—to know more, not for the sake of money or power, but for the transcendental good of greater understanding and a richer life of the mind. As you may have guessed, the three of us are deeply committed to pure research, but also to applied—so long as the research is done well and is not corrupted by malign motives.
9. What distinguishes great researchers from the rest of us is the brilliance, knack, or just dumb luck of stumbling over a problem whose solution makes all of us see the world in a new way.
10. Many research projects begin with an imaginary conversation while reading another's report: Wait a minute, he's ignoring . . . But before you set out to correct a gap or misunderstanding, be sure it's real, not your own misreading.